BassLink II

Powered Automotive Subwoofer

SERVICE MANUAL

Infinity Systems, Inc.
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Woodbury, New York 11797

Rev0 8/2005

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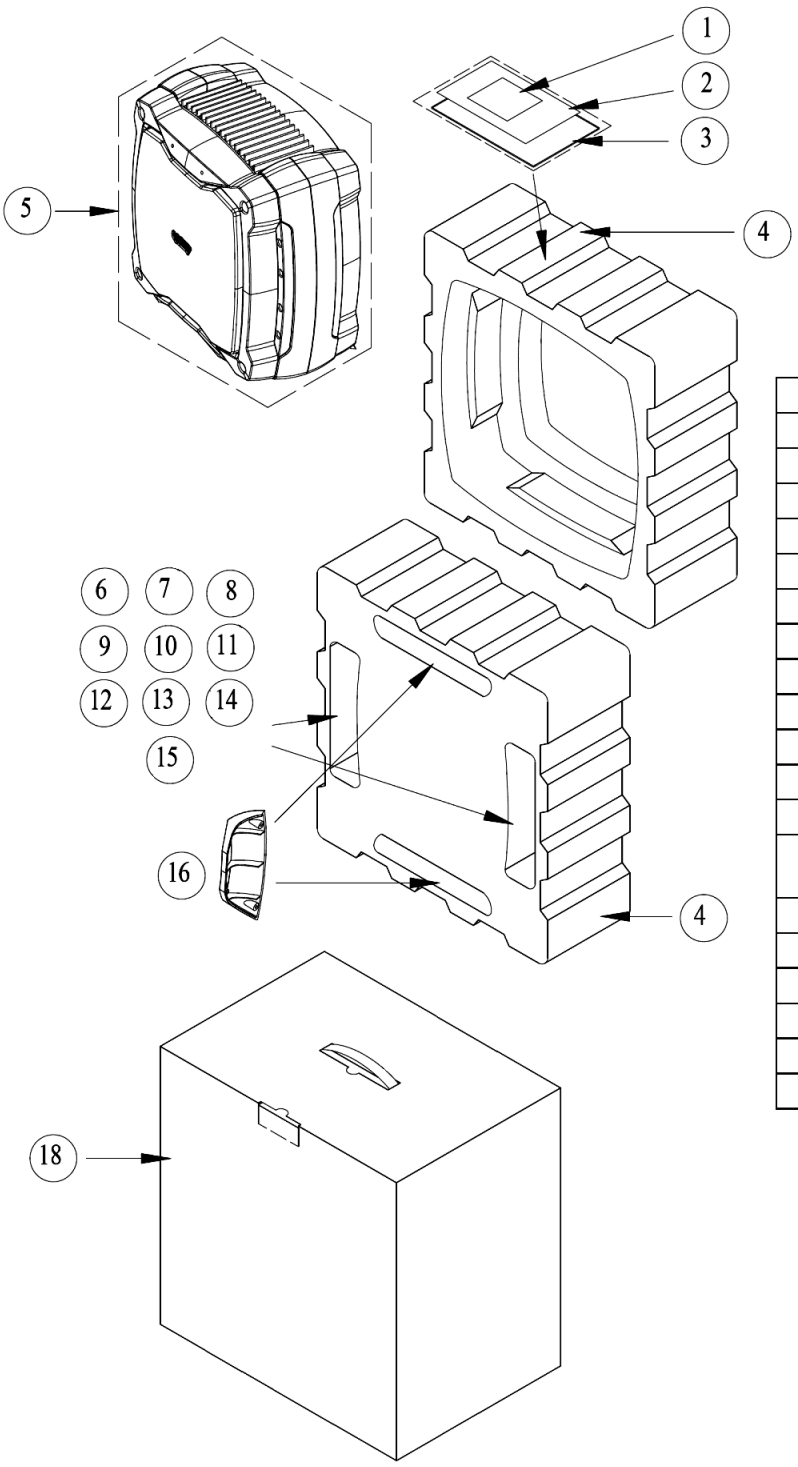
Basslink II Specifications

Output Power (14.4V supply)	250W RMS 1% THD
Type of Amplifier	AB
Frequency response:	20Hz – 120Hz
Maximum input signal:	4.0V
Maximum sensitivity:	50mV to 4V Line-level input 1V to 16V High-level input
Input Impedance	20K Ω
Idle Current	<800mA
Signal to Noise	>100dB (A-weighted ref to full power)
Crossover Type	Fixed LP @ 12dB per octave
Crossover Range	Variable 50 – 120 Hz
Bass EQ	40Hz (-6dB to +3dB)
Phase Control	0 and 180°
Min Current Draw (Idle)	<800mA
Remote Current Draw	<3.5mA
Max Current Draw	26A
DC Offset	<30mV
Bass Boost	-6dB to +3dB @ 40Hz
Auto Turn-On	2 -10min (Time to turn Off)
Operating Voltage	10 – 16 VDC
Overall Dimensions (L x W x H):	15-1/16" x 8-3/4" x 15-5/16" (383mm x 223mm x 389mm)
Sub Level Control (w/ housing):	2-3/16" x 2-5/16" x 7/8" (56mm x 59mm x 23mm)
Sub Level Control (w/o housing):	2-3/16" x 1-5/16" x 3/4" (56mm x 34mm x 20mm)
Fuse:	25A

Infinity continually strives to update and improve existing products, as well as create new ones. The specifications and details in this and related JBL publications are therefore subject to change without notice.

PACKAGE



Item	Description	Part Number	Qty
1	Infinity Decal		1
2	Warranty Card	405-000-00336	1
3	Owner's Manual	406-000-05216	1
4	Left/Right Foam Pads	431-000-05312	2
5	Plastic Bag		1
6	Plastic Bag		1
7	100µf Capacitor	128-F108K1601	4
8	25A fuse	154-k025A800	1
9	Remote Level Control	015-7500-00127	1
10	Plastic Bag		1
11	RCA Cable Pair	165-540001200	2
12	Cable For Remote Control (4C telephone wire 5M)	162-A5000001	1
13	Hardware	371-000-05086	1
14	High Level Input Cable Pair	162-A600D002	1
15	High Level Input Cable Pair	162-A600D001	1
16	Mounting Feet	325-AL-05097-0VA	2
18	Outer Carton	402-000-05320	1

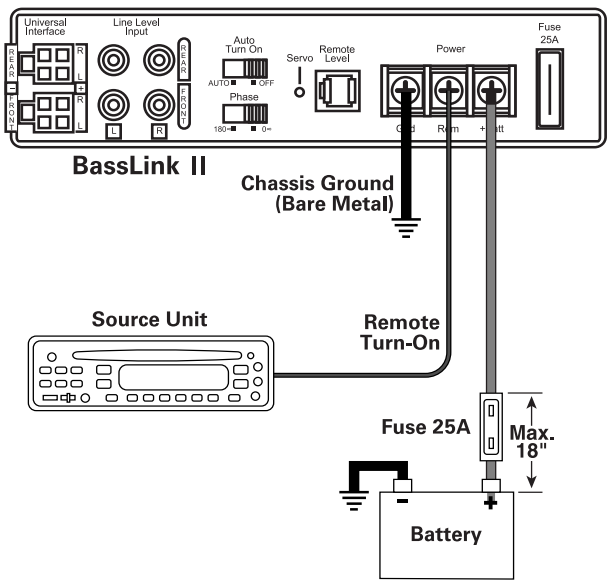
Power Connections

Make Power, Ground and Remote turn-on connections as shown in Figure 5. Observe the following installation tips:

- Use #8 AWG wire for the +BATT (+12Vdc) and GND (ground) connections. If needed, use at least a #20 AWG wire for the REM (remote) connection.
- If you pass the power or remote wire through the vehicle's firewall or other metal obstruction, it must be insulated with a rubber grommet. If a factory-installed grommet is unavailable, be sure to install a rubber grommet to protect the wires.
- Connect a short GND wire from BassLink II to the nearest bare metal surface. For a good connection, sand away paint from the metal surface and use a screw with a (star) lock washer.
- Install a fuse holder with a 25A fuse within 18" of the battery + terminal (see Figure 5).
- The REM connection requires +5 to +12 Vdc for BassLink II to turn on remotely. Most head units with preamp outputs provide this remote voltage signal. For speaker-level applications, a remote connection is not required, since BassLink II's Auto Turn On feature will sense voltage on the speaker wires to automatically turn on BassLink II.

IMPORTANT: *To enable BassLink II's Auto Turn On feature, set AUTO TURN ON to the AUTO position (see Figure 15 on page 6).*

Figure 5. Power connections for BassLink II.



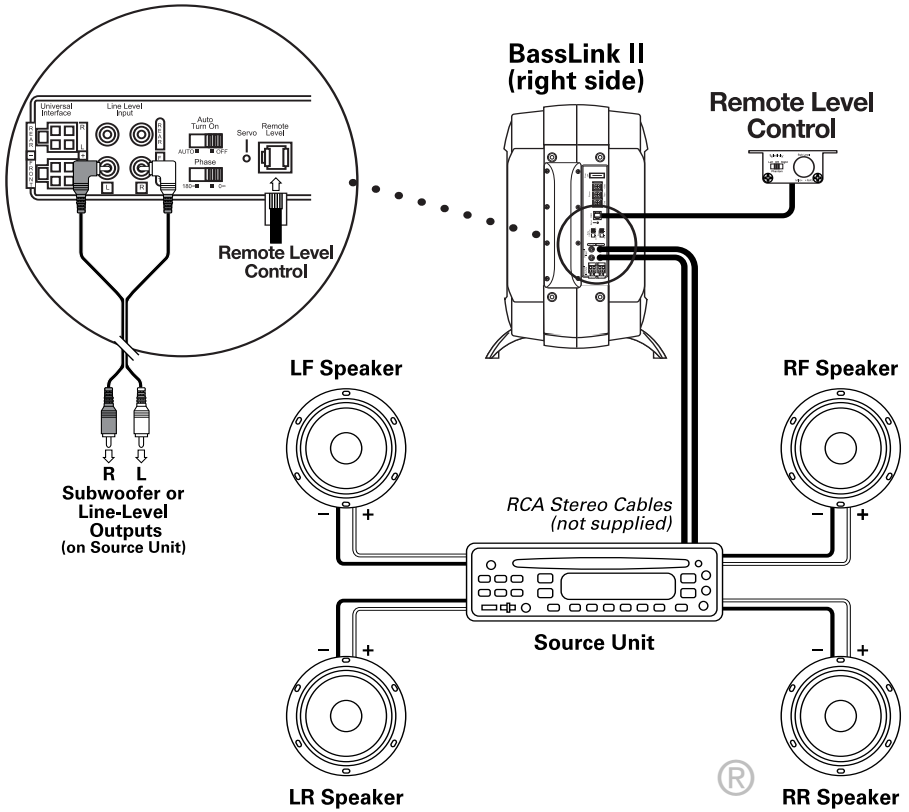
Applications

BassLink II is equipped with four line-level (RCA) inputs and four speaker-level inputs. Any combination of line-level and speaker-level inputs may be used to provide nonfading bass when connected to a head unit with four outputs.

Figure 6. BassLink II audio connections for a head unit with two line-level or subwoofer (RCA) outputs.

To help you plan your installation, we have included three system applications in Figures 6 through 8. For more system ideas, see your authorized Infinity car audio dealer.

Note: The applications show the REMOTE LEVEL control, which installs under the dashboard for easy in-car bass level adjustments (see page 7).



APPLICATIONS (CONTINUED)

Figure 7. BassLink II audio connections for a head unit equipped with four line-level (RCA) outputs.

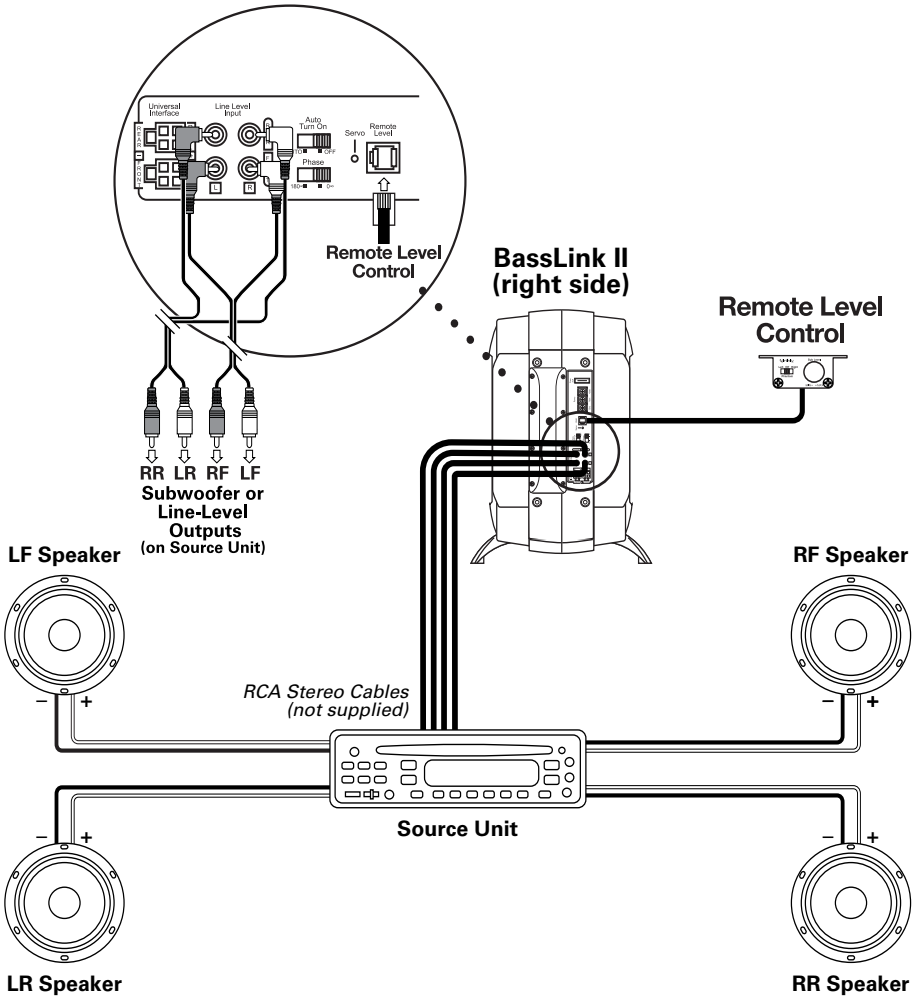
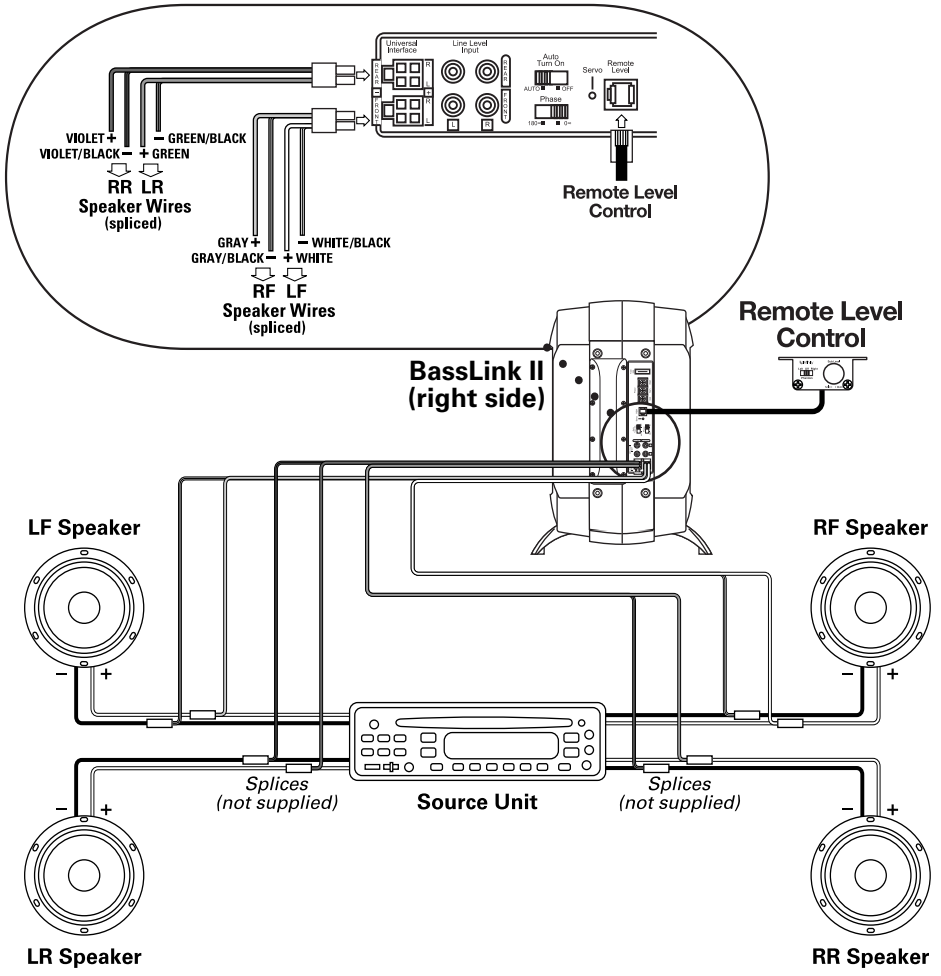


Figure 8. BassLink II audio connections for a head unit equipped with four speaker-level outputs.



BassLink 4sc Installation

DESCRIPTION

The BassLink 4sc is a plug-and-play amplifier designed to make upgrading your system easy. The BassLink 4sc is designed to slide into an available slot in the BassLink II. Unlike an additional outboard amplifier, the BassLink 4sc doesn't require any additional space. The BassLink 4sc also includes a Phantom Center effect, which creates the illusion of a center channel even if no center speaker is installed.

INSTALLATION

1. Remove the wiring cover from BassLink II.
2. Remove the eight screws that hold the AMPLIFIER DOCK cover panel in place (Figure 9). Save the screws.
3. Remove the screw that attaches the two wiring harnesses and connectors to the panel.
4. Connect the wiring harness connectors to the appropriate connectors on the BassLink 4sc's circuit board. See Figure 10.
5. Insert the amplifier and install the eight screws that were removed in Step 2. See Figure 10.
6. Install 40A fuse at the battery.

Note: All four inputs on BassLink II must be used in order for the BassLink 4sc amplifier to function properly.

Figure 9.

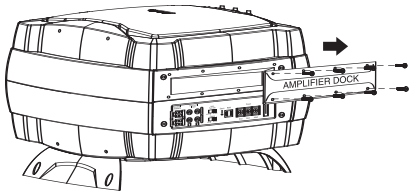
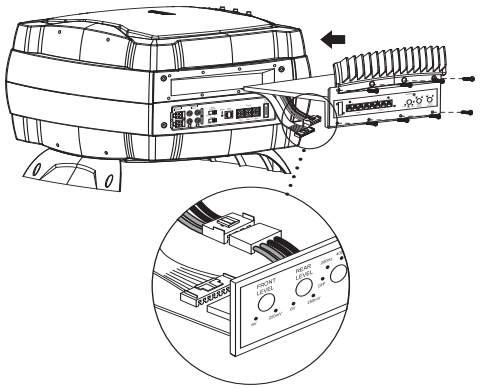


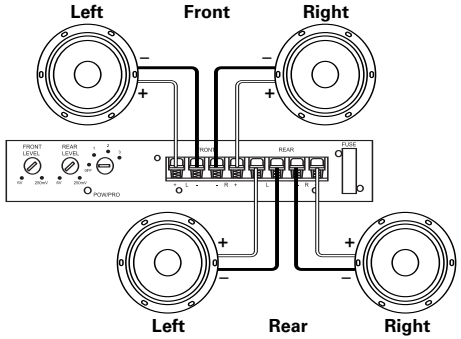
Figure 10.



CONNECTIONS

Connect the front and rear speakers as shown in Figure 11.

Figure 11.

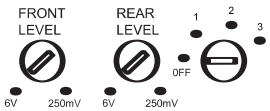


SETTINGS

The BassLink 4sc has input level control for the front and rear speakers and PHANTOM CENTER controls.

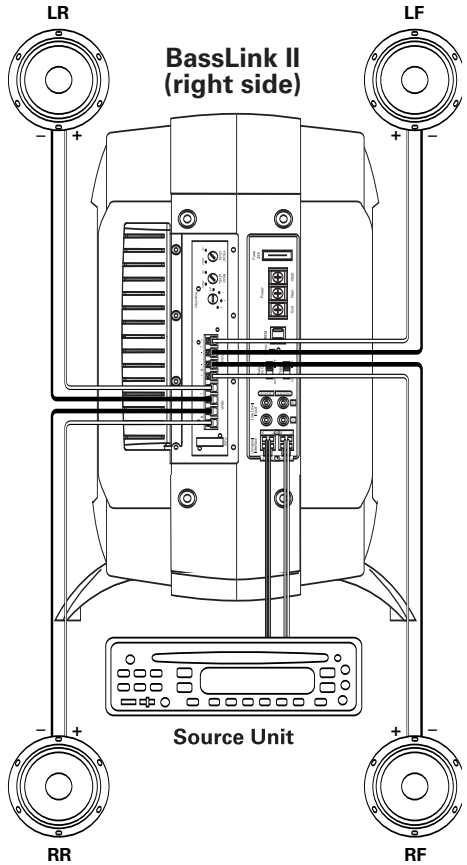
For proper setup, please refer to the full BassLink 4sc owner's manual.

Figure 12.



Application

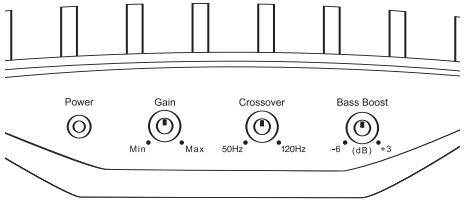
Figure 13. Typical installation using all four speaker-level inputs from the source unit.



Controls and Functions

BassLink II provides several controls and indicators that simplify sonic integration with virtually any vehicle's unique acoustic properties. They are located on the front and side panels, as shown in Figures 14 and 15.

Figure 14. BassLink II controls on the front panel.



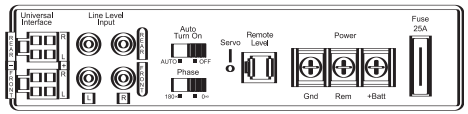
POWER LED: This indicator will glow blue when BassLink II is operational.

GAIN Control: Use this control to adjust the relative volume (loudness) of BassLink II with respect to the other speakers in the vehicle.

CROSSOVER: Use this control to adjust the amount of high-frequency information present in BassLink II's output. A lower value means more of the high frequencies are filtered out.

BASS BOOST: Use this control to correct any perceived peak or dip in the bass response (typically around 40Hz in most vehicles). Set the control to any value between –6dB and +3dB, according to what sounds best.

Figure 15. BassLink II controls on right-side panel.



PHASE Control: Use this switch to reverse the phase of BassLink II's output with respect to its input. Choose the position (0° or 180°) that sounds the best.

Note: Depending on BassLink II's orientation and location in a vehicle, reversing the phase may, or may not, increase or decrease the amount of upper bass being reproduced.

AUTO TURN ON: For speaker-level connections, use this switch to activate (or deactivate) BassLink II's automatic turn-on circuit. For most speaker-level applications, slide the switch to AUTO. However, if your system produces false turn-on signals or uses a remote (REM) connection, slide the switch to OFF.

REMOTE LEVEL Control: Use this RJ11 jack to connect the REMOTE LEVEL control (see page 7).

SERVO LED: This indicator glows blue when the subwoofer is at maximum excursion and the amplifier is modifying the output to maintain maximum performance. Be sure to monitor this indicator during BassLink II setup (see *Tuning BassLink II*). When properly tuned, the SERVO LED should light momentarily during high-level bass transients. Avoid adjustments that cause the LED to remain lit for extended periods.

Tuning BassLink II

1. Unplug the RJ11 cable that connects the REMOTE LEVEL control to BassLink II.
2. Make sure the head unit is off and its volume control is set to minimum.
3. On BassLink II's front panel, initially set all controls to their midpoint positions, as shown in Figure 14. On BassLink II's side panel, initially set PHASE to 0°, as shown in Figure 15.
4. Turn on the head unit and play a favorite music track that has substantial bass. Set the head unit's volume control to 75 percent of the total output (approximately 3 o'clock on rotary controls).
5. Adjust the GAIN control clockwise until the SERVO LED (on BassLink II's side panel) begins to flash with each bass note but doesn't stay lit continuously.
6. Listen to your system, making a mental note of the amount of upper bass being reproduced.
7. Switch the PHASE control to 180° and listen again for upper bass content. There may be more upper bass, less upper bass, or no change at all. The position that provides the most upper bass is correct, but choose either setting according to your taste.
8. Adjust the CROSSOVER control clockwise or counterclockwise until you hear only low-frequency information. For example, you should NOT hear any vocals coming from BassLink II when seated in the normal listening position.
9. Adjust the BASS BOOST control clockwise or counterclockwise to suit your taste.
10. Recheck the SERVO LED to make sure it's flashing in time with the bass but is not lit continuously. If it is lit continuously, adjust the GAIN control counterclockwise until the SERVO LED only flashes in time with the bass.
11. Reconnect the RJ11 cable between the REMOTE LEVEL control and BassLink II. You may then use the REMOTE LEVEL control to adjust the level of the bass to suit your taste and/or different program material.

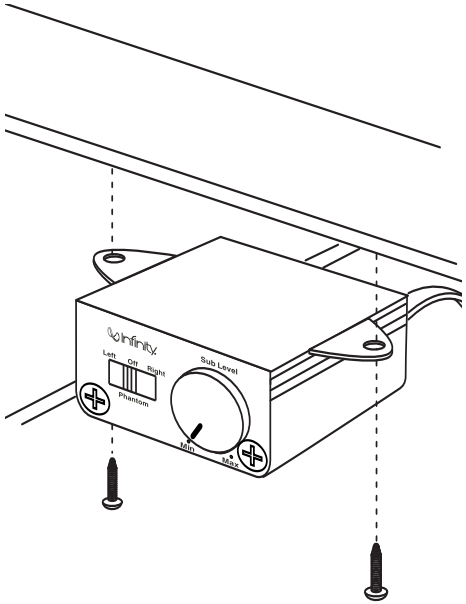
Note: In most cases, the above steps will provide satisfactory tuning. However, the actual process may require several readjustments of each control, since the settings will interact with each other. If necessary, consult your authorized Infinity car audio dealer for help in tuning your system.

Installation

The REMOTE LEVEL control may be mounted under the dash or may be dismantled and mounted in the dash for a factory appearance.

UNDER-DASH MOUNTING
Select a mounting location that allows easy access to the control while driving. Using the REMOTE LEVEL control as a template, mark and drill holes in the mounting surface. Attach the REMOTE LEVEL control using the mounting screws provided (Figure 16).

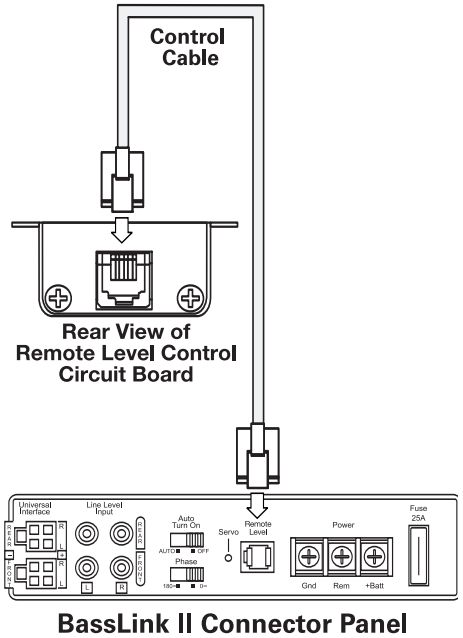
Figure 16. Under-dash mounting of the REMOTE LEVEL control.



Connecting the REMOTE LEVEL Control to BassLink II

Route the cable behind the dash or other interior panels and under the carpet. Do not route the cable outside the vehicle. Connect the RJ11 cable between the RJ11 receptacle on the BassLink II and the receptacle on the REMOTE LEVEL control (Figure 17).

Figure 17. REMOTE LEVEL control electrical connection.



Operation

The REMOTE LEVEL control is used to adjust the output level of the subwoofer. This level control allows you to reduce the subwoofer output for music with heavy bass content and increase the level for music with less bass content.

PHANTOM CENTER Switch: The REMOTE LEVEL control has a three-position switch that is used when the BassLink 4sc amplifier is installed. Please refer to the BassLink 4sc owner's manual for the specific operation of this switch.

TROUBLESHOOTING

BassLink II (4sc, if installed)

- PROBLEM:
  POWER LED not lit.

  CAUSES and SOLUTIONS:
  1. Fuse is blown and needs replacement.
  2. Head unit not functioning properly. Check remote voltage, and power, ground or remote connections.

- PROBLEM:
  POWER LED is lit but there is no bass.

  CAUSES and SOLUTIONS:
  1. Inputs are not connected. Check connections.
  2. Head-unit fader control is not set properly. Adjust head-unit fader control to feed audio signals to BassLink II.

- PROBLEM:
  BassLink II sounds muddy or distorted.

  CAUSES and SOLUTIONS:
  1. Gain is set too high and SERVO LED is lit constantly. Readjust GAIN control (see *Tuning BassLink II* on page 6).
  2. Bass is set too high. Readjust BASS BOOST control (see *Tuning BassLink II* on page 6).
  3. Head-unit output is distorted or blown. See your authorized Infinity car audio dealer.

- PROBLEM:
  No output from BassLink II when head-unit fader control set to front or rear (in a 4-channel connection).

  CAUSE and SOLUTION:
  Input connections are improperly wired. Verify all connections (see *Applications* starting on page 3).

- PROBLEM:
  BassLink II turns on before head unit is completely on and produces a “thump” sound.

  CAUSE and SOLUTION:
  For speaker-level connections, head unit is producing a false turn-on signal. On BassLink II’s side panel, slide AUTO TURN ON to OFF.

- PROBLEM:
  BassLink II’s POWER LED remains on after head unit is turned off.

  CAUSE and SOLUTION:
  For speaker-level connections, this is normal operation when AUTO TURN ON is set to ON. BassLink II will remain on another 5 to 10 minutes after sensing that audio signals are not present before shutting down.

- PROBLEM:
  BassLink II produces a loud humming noise with the system OFF when using speaker-level inputs.

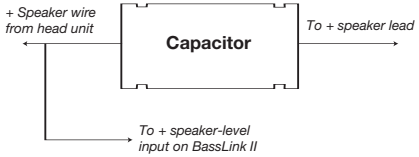
  CAUSE and SOLUTIONS:
  This problem is caused by a feedback loop between your speakers and the high-level inputs of BassLink II.

  Choose one of the following solutions:

  1. Connect a wire from the REMOTE terminal on BassLink II to the remote turn-on of your head unit or to the vehicle’s accessory circuit. On the control panel, slide the AUTO TURN ON switch to the OFF position.

  2. Connect the supplied capacitors between each of the speaker outputs of the head unit and the speaker’s positive lead, as shown in Figure 18. Connect each positive lead of BassLink II’s high-level inputs to the head-unit side of the capacitors. Use one capacitor per speaker input channel.

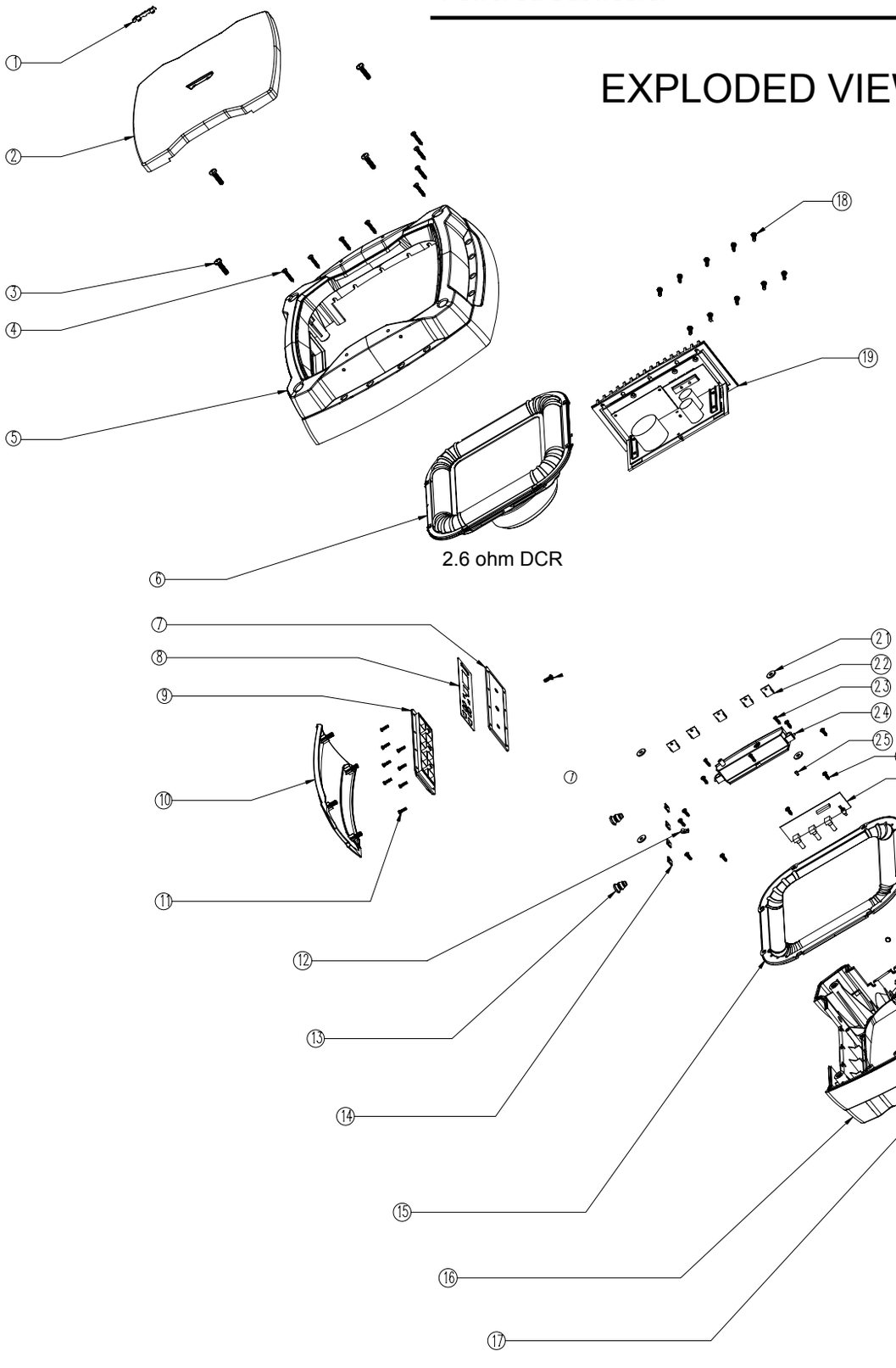
Figure 18. Connecting supplied capacitors.



BASSLINK II DISASSEMBLY

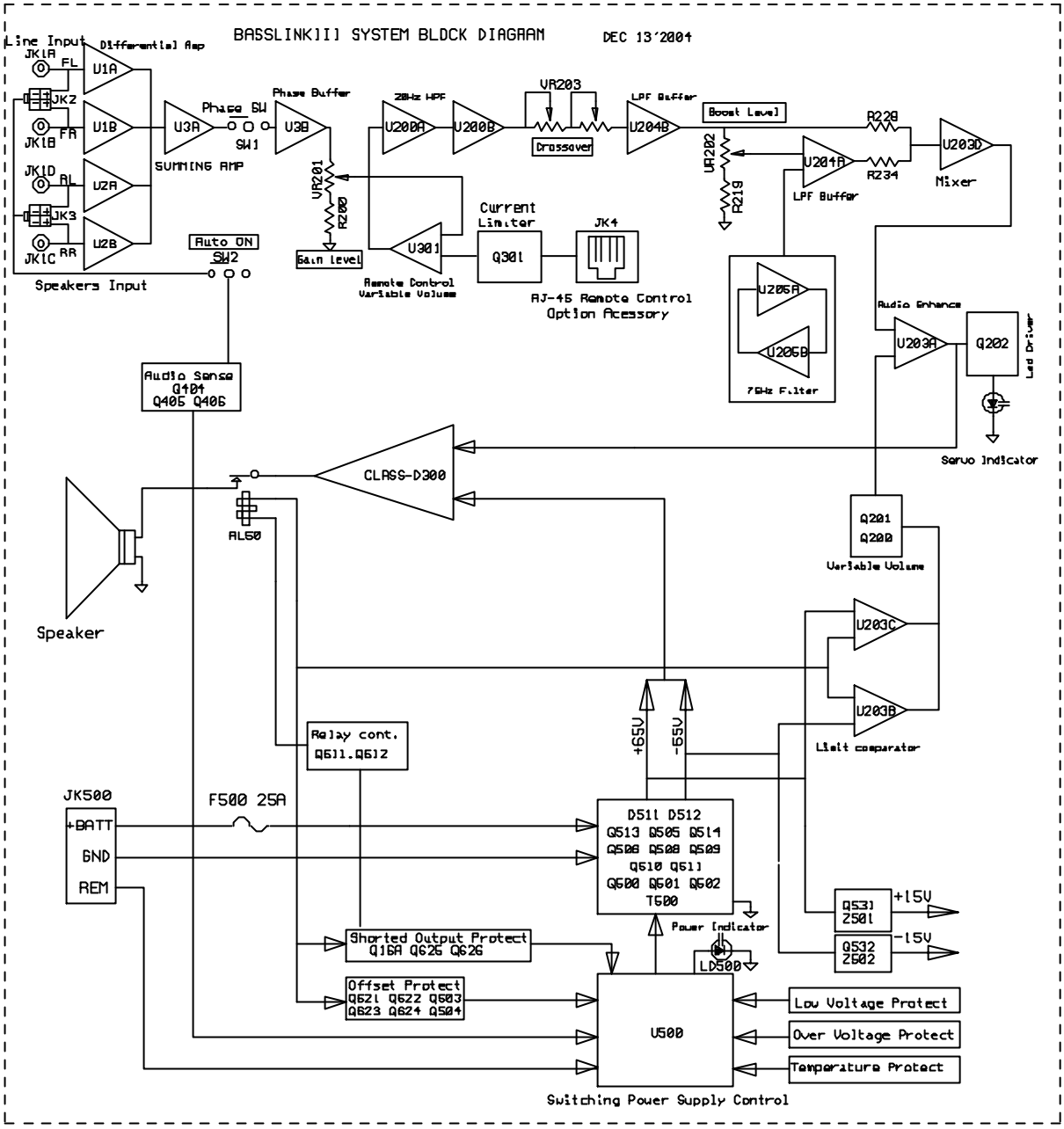
1) Remove “Amplifier Dock” cover; (8) Phillips screws.
2) Remove (10) Phillips screws holding main heatsink/amplifier to enclosure, tapping the heatsink with a rubber mallet may be necessary to loosen it. Pull amplifier from enclosure
3) Remove single 12 pin Molex connector M300 and both pairs of FASTON terminals from the amplifier PCB; do not mix up the two pairs of red/black wires (speaker and A/B). Label if necessary.
4) With the screw cavities facing upwards on the enclosure, remove the (12) Phillips screws holding the enclosure together.
5) Using the opening of the “Amplifier Dock” as leverage, separate the enclosure halves; to completely separate the wiring, remove the 8 pin Molex connector M200 from the Jack/Limiter PCB.
6) If the Gain PCB (Gain/Xover/Base pots) needs to be accessed, there is an additional screw holding the plastic cover on, besides the two exposed ones, that must be removed and is visible after removing the 10" passive radiator (8 Phillips screws)
7) The Jack PCB is not serviceable, as it is attached to the enclosure with adhesive.
8) Reassembly: follow in reverse order, and be sure to not mix the red/black wire pair (speaker and A/B) on the MAIN PCB when you connect them to the FASTON terminals.

EXPLODED VIEW



Ref #	Description	Part Number	Qty
1	Infinity Logo	316-000-00130-1BA	2
2	Grille	329-100-05125-0VA	2
3	Screw M6*25 Black	351-AM06025A946	8
4	Screw T4*25 Black	352-AM04025D964	16
5	Front baffle	372-000-05027	1
6	Woofer	F25X12PR-03DW-P	1
7	Gasket	333-EVA-05142-0BA	1
8	PVC label	315-PC-05035-0TAE	1
9	Side Cover	305-PC-05007-0BA	1
10	Plastic Control Cover	305-PC-05008-0BAE	1
11	Screw M3*12 Black	351-AM03012A090	8
12	Grommet	335-NYL-05012-0WA	1
13	Rubber Cover Retainers	338-RUB-05027-0BA	4
14	Metal Insert	339-FE-05015	4
15	Passive Woofer	PR-255008-P	1
16	Back Baffle	372-000-05028	1
17	Rubber Cork	338-RUB-05029-0BA	8
18	Screw M4*15 Black	351-AM04015A947	10
19	Heat Sink	011-7525-00580	1
20	Screw M3*12 Black	352-CM03012D076	1
21	Gasket	333-EVA-05139-0BA	12
22	Metal Insert	339-FE-05014	5
23	Screw M3*12 Black	352-AM03012D831	3
24	Cover	398-PC-05128	1
25	Light Pipe	398-PC-05127	1
26	Screw M4*12 Black	352-HM04012D319	9
27	Control PCB		1
28	Knob Gain/Xover/Base	015-7500-00130	3

Date



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							DWN BY ' yyhsu	2
							DATE : Dec 13'2004	3

BASSLINK II Electrical Parts List			
Part Numbers	Description	Qty	Reference Designators
POWER SUPPLY/MAIN PCB			
Resistors			
110-14102j26	Resistor 1K 1/4W ±5% CF 26mm	1	R561
110-16102j26	Resistor 1K 1/6W ±5% CF 26mm	1	R560
110-16103j26	Resistor 10K 1/6W ±5% CF 26mm	1	R540
110-16154j26	Resistor 150K 1/6W ±5% CF 26mm	1	R80A
110-16182j26	Resistor 1.8K 1/6W ±5% CF 26mm	1	R74A
110-16203j26	Resistor 20K 1/6W ±5% CF 26mm	2	R563,564
110-16220j26	Resistor 22Ω1/6W ±5% CF 26mm	4	R526,527,528,529
110-16221j26	Resistor 220Ω1/6W ±5% CF 26mm	1	R76A
110-16473j26	Resistor 47K 1/6W ±5% CF 26mm	1	R77A
110-16682j26	Resistor 6.8K 1/6W ±5% CF 26mm	1	R77C
116-1410r0j26x	metal film Resistor 10Ω 1/4W 26mm	1	R615
116-142201j26x	metal film Resistor 2.2K 1/4W ±5% MO 26mm	2	R532,534
113-50r12j00	cement Resistor 0.12ohm 5W ±5%	1	R82A
113-50r18j00	cement Resistor 0.18Ω 5W ±5%	1	R81A
116-101000j20x	metal film Resistor 1W 100Ω 5%	1	R539
116-303300jk2x	metal film Resistor 330Ω 3W 5% 10mm	2	R531,533
Capacitors			
135-c158m35-e	electrolytic cap 1500uF 35V ±20% 105℃13mm*25mm (RoH	2	C501A,501B
135-c337m35	electrolytic cap 330uF 35V ±20% 105℃	1	C561
138-5228m801	large aluminum ec 2200uF 80±20% ψ25*30	2	C521,523
129-a334j633	metalized capacitor 0.33uF 63V±5% MSC	1	C562
130-2b101k503	disc capacitor 100P 50V ±10%	3	C335,336,337
130-2b221mj03	disc capacitor 220P 1000V ±20%	1	C539
130-3f104z503	disc capacitor 0.1U 50V +80/-20%	4	C502,533,535,540
130-3f222k503	disc capacitor 0.0022uF(2.2NF) 50V ±10%	1	C560
132-104ja03	mylar capacitor 0.1UF 100V±5%	3	C526,537,538
132-372ja03	mylar capacitor 0.027UF 100V±5%	1	C60A
135-3476m50	electrolytic cap 47uF 50V ±20%	4	C531,532,534,536
140-ax104ka03	multi-layer capacitor 0.1uF 100V X7R ±10%	2	C104A,C524
130-3f104z503	disc capacitor 0.1U 50V +80/-20%	1	
Semiconductors			
192-161tip31c	transistor TIP31C SGS NPN	1	Q531
192-162tip32c	transistor TIP32C SGS PNP	1	Q532
192-16360nf06	transistor STP60NF06 SGS FET	4	Q508,509,510,511
197-141n4004	diode IN4004	1	D50
197-301604gd	diode SF1604G-D	2	D511,512
192-027c2235y	transistor 2SC2235Y NPN	1	Q16A
197-0131n4148	transistor IN4148 26mm	1	D52A
199-05001505j	zener diode 400mW 15V ROHM 52mm IN5254B	2	Z501,502
Miscellaneous			
109-1ttc802j0	thermister TTC-802(JS)NTC	1	TH501
120-1000003	inductor 10W AI YT-C3104-005 1CRHW 354708LTB	3	B500,501,502
122-14106m130	inductor MIZI R251510 3*ψ1.3 1.0mH	1	L500
150-r36231504	transformer RT36-6T:28T	1	T500
171-u833h1cc	relay 833H-IC-C 12VDC	1	RL50
175-1c12v01	coupling 12PIN PITCH=2.5mm	1	M300
176-ft205	wire connector pin FASTON M#205	2	SP-,A,
176-ft250	wire connector pin FASTON M#250	2	SP+,B,
359-FIB-00004	gasket 26*8*1.5T	4	
193-0s080020	insulator 80*20*0.3t	2	

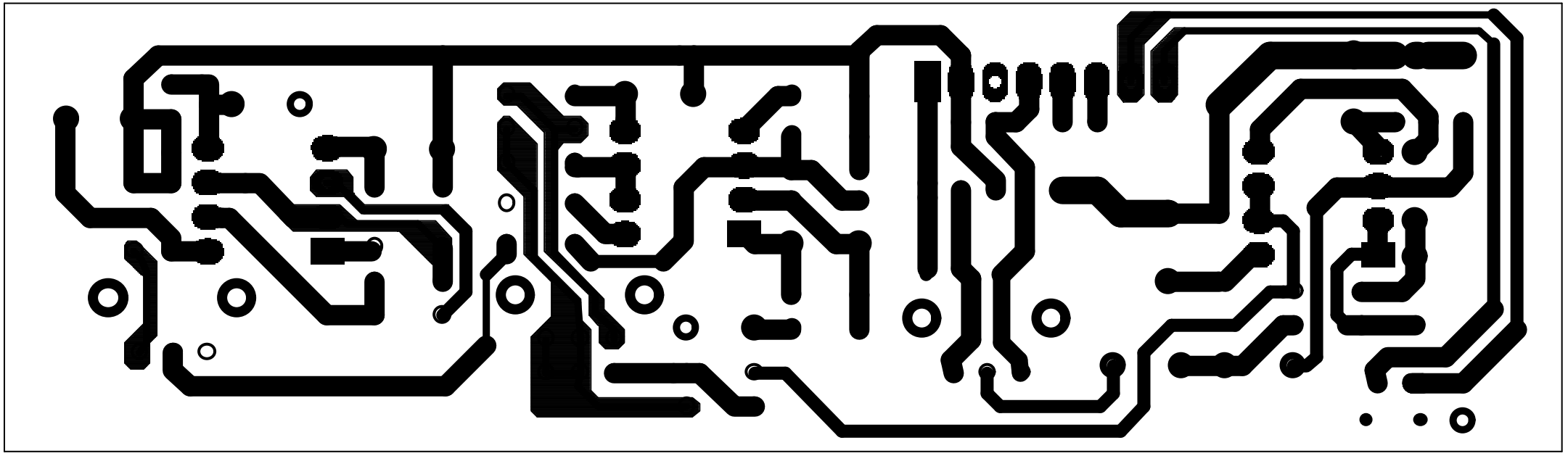
Part Numbers	Description	Qty	Reference Designators
POWER SUPPLY/MAIN PCB			
193-0s4211	insulator (INSULATION SPACER)42*11	1	
193-201612tr	insulator TO-220 16mm*12mm	3	for Q10,10B,11
236-AL-05001	AL patten	1	
317-000-00037	terminal T=0.3	1	
323-AL-05042-0BA	heat sink 218*100*21(H)	1	
323-AL-05043-1LA	heat sink 177*93*73MM	1	
333-EVA-00216	EVA PACKING(G)15*25*3T	2	TO thermister-2
333-EVA-05144-1BAE	EVA 199.63*10*3T black (RoHS)	2	
333-EVA-05145-2BAE	EVA98*8.5*3T (RoHS)	2	
351-AM03005A015	screw M3*0.5P*5L	4	PCB -H/S-4
351-AM03016A097	M3*16 screw	4	heat -holder-4
351-AM03022A958	screw M3*22	2	Toclass-D-2
352-BM04006E975	screw T45*6	8	"L"H/S-H/S-8
361-FE-05000	IC bracket 69*12*4*1.5T	1	
361-FE-05050-0LA	IC bracket 64*12*1.5T	1	
362-CU-05029-0YA	PCB interval batten 5.5L*5.5W*6.5H	4	PCB-H/S-4
JACK/LIMITER PCBs			
Resistors			
110-16102j26	Resistor 1K 1/6W±5% CF 26mm	1	R52
110-16103j26	Resistor 10K 1/6W±5% CF 26mm	18	R47,48,49,50,285,294,302,307 R309,330,5,6,7,8,23,24,25,26
110-16104j26	Resistor 100K 1/6W±5% CF 26mm	10	R301,27,28,29,30,31,32,33,34,36
110-16122j26	Resistor 1.2K 1/6W±5% CF 26mm	1	R295
110-16123j26	Resistor 12K 1/6W±5% CF 26mm	1	R234
110-16151j26	Resistor 150Ω 1/6W±5% CF 26mm	2	R310,311
110-16153j26	Resistor 15K 1/6W±5% CF 26mm	2	R304,328
110-16154j26	Resistor 150K 1/6W±5% CF 26mm	1	R329
110-16183j26	Resistor 18K 1/6W±5% CF 26mm	1	R274
110-16222j26	Resistor 2.2K 1/6W±5% CF 26mm	5	R37,38,39,40,228
110-16223j26	Resistor 22K 1/6W±5% CF 26mm	18	R17,18,41,42,43,44,45,46,254,287 R9,10,11,12,13,14,15,16
110-16273j26	Resistor 27K 1/6W±5% CF 26mm	2	R257,273
110-16303j26	Resistor 30K 1/6W±5% CF 26mm	1	R305
110-16333j26	Resistor 33K 1/6W±5% CF 26mm	1	R277
110-16472j26	Resistor 4.7K 1/6W±5% CF 26mm	10	R275,276,1,2,3,4,19,20,21,22
110-16473j26	Resistor 47K 1/6W±5% CF 26mm	2	R14A,290
110-16474j26	Resistor 470K 1/6W±5% CF 26mm	1	R278
110-16511j26	Resistor 510Ω 1/6W±5% CF 26mm	4	R256,586,303,306
110-16512j26	Resistor 5.1K 1/6W±5% CF 26mm	2	R312,51
110-16562j26	Resistor 5.6K 1/6W±5% CF 26mm	1	R238
110-16563j26	Resistor 56K 1/6W±5% CF 26mm	1	R237
110-16755j26	Resistor 7.5M 1/6W±5% CF 26mm	1	R293
116-167871f26	metal film Resistor 7.87K 1/6W MF 26mm	1	R279
Capacitors			
135-0477m35	electrolytic cap 470uF 35V ±20%	1	C503
137-3106m35-e	mini aluminum ec 10uF 35V 85℃ ± 20% ψ5*5 (RoHS)	2	C50,C53
130-2b101k503	disc capacitor 100P 50V ±10%	18	C4,11,12,17,18,20,23,24,26,29,30 C32,214,253,330,331,333,334
130-2b470k503	disc capacitor 47P 50V ±10%	4	C3,19,25,31
130-3f104z503	disc capacitor 0.1U 50V +80/-20%	11	C5,6,39,40,41,43,268 C269,301,303,501
132-103j503	mylar capacitor 0.01uF 50V ±5%	5	C252,270,271,500,504
132-153j503	mylar capacitor 0.015U 50V ±5%	1	C33
135-3105m50	electrolytic cap 1U 50V ±20%	1	C311
135-3106m50	electrolytic cap 1uF 50V ±20%	11	C7,8,34,272,273,300 C302,13,14,15,16

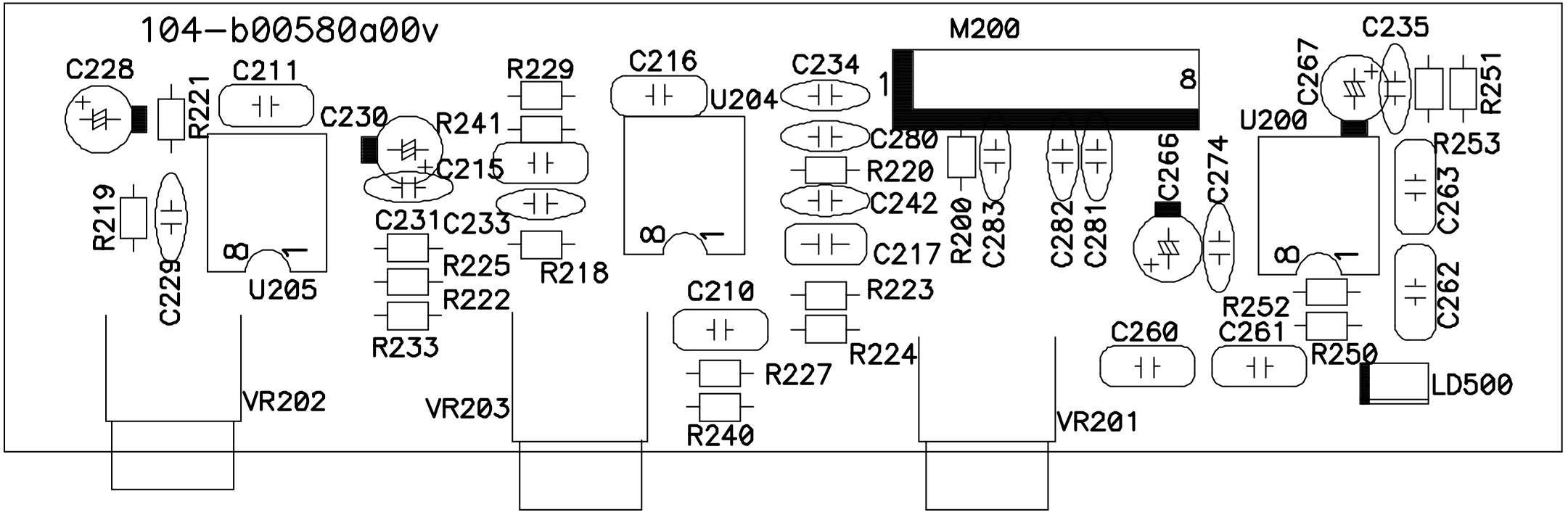
Part Numbers	Description	Qty	Reference Designators
JACK/LIMITER PCBs			
135-3226m50	electrolytic cap 22U 50V ±20%	9	C1,2,9,10,21,22,27,28,264
135-3475m50	electrolytic cap 4.7U 50V ±20%	1	C312
135-3476m50	electrolytic cap 47uF 50V ±20%	1	C251
137-3106m35-e	mini aluminum ec 10uF 35V 85℃ ± 20% ψ5*5 (RoHS)	2	C52,C51
Semiconductors			
190-06m13700n	I.C. NJM13700N JRC Dual Op Transconductance Amplifier	1	U301
190-06m45581d	I.C.NJRC NJM4558LD Dual Op-amp	3	U1,2,3
190-16t1074cn	I.C TL074CN ST Quad Op-amp	1	U203
195-10204hd	L.E.D red 3mm FOR STANDBY	1	LD200
197-306a20	diode 6A 200V 6A20	1	D502
192-027c1815gr	transistor 2SC1815GR NPN	3	Q200,201,301
192-028a1015gr	transistor 2SA1015GR PNP	1	Q202
197-031n4148	diode IN4148 26mm	6	D201,202,1,2,3,4
Miscellaneous			
154-k025a800	fuse 25A 32V ATC UL/CSA	1	F500
155-9f30240	fuse holder F30240100P	1	for F500
162-10402003	wire ass'y 400mm 12AWG BLACK#250 W/ TUBE SLEEVE	1	BAT+F
162-10430001	wire ass'y 430mm 12AWG BLACK#205 W/ TUBE SLEEVE	1	A
162-5020c003	wire ass'y 200mm#2468 26AWG 9PIN	1	WB1
162-5045c001	UL wire ass'y 450mm #2468 26AWG 12PIN	1	W300
162-a030d001	wire ass'y 300mm 16AWG	1	BAT+,BAT-
174-0b402p	RCA JACK B402P	1	JK1
174-535913sg-1	DC JACK BASSLINK II	1	JK500
174-9mjd0604	jack M/JACK D/S 6P4C BLACK 6U	1	JK4
175-9c08v01	coupling 8PIN PITCH=2.5mm	1	W200
175-9f10v02	coupling 10PIN black PITCH=2.54mm PHFY-10SB-S032	2	W301,302
175-9f10v22a	coupling PIN HEADER 10PIN black P=2.54mm	2	M301,302
175-9h04v01	coupling 4PIN PITCH=4.2mm	2	JK2,3
180-s570050	switch SS70050-0202-10T-NN	2	SW1,2
359-FIB-00005	gasket ODψ8*3.5T	2	
362-NYL-05030-0WA	interval batten LDE 12H LEDS-12	1	
333-EVA-05156-0BA	EVA gasket 42.5*3*1mm	2	
333-EVA-05157-0BA	EVA gasket 174*3*1mm	2	
333-SPG-00850	foam 50*5*200mm	1	
333-SPG-00860	foam 450*50*5T	1	
333-SPG-00875	foam 250*50*5T	1	
333-SPG-00876	foam 400*50*5T	1	
362-CU-05034-0YA	coppet postψ5.5*ψ5.5*12.4H	6	PCB TO PCB-6
362-NYL-05006-0WA	interval batten 10H(MAE-10T;HAKUTO-10)white	6	PCB-PCB-6
PWM/CONTROL PCB			
Resistors			
110-16100j26	Resistor 10ΩK 1/6W±5% CF 26mm	3	R521,523,613
110-16102j26	Resistor 1K 1/6W±5% CF 26mm	4	R424,502,519,629
110-16103j26	Resistor 10K 1/6W±5% CF 26mm	12	R507,508,511,611,612,616,621 R622,623,625,626,627
110-16104j26	Resistor 100K 1/6W±5% CF 26mm	4	R517,614,618,624
110-16105j26	Resistor 1M 1/6W±5% CF 26mm	2	R420,422
110-16106j26	Resistor 10M 1/6W±5% CF 26mm	1	R421
110-16123j26	Resistor 12K 1/6W±5% CF 26mm	1	R513
110-16152j26	Resistor 1.5K 1/6W±5% CF 26mm	1	R550
110-16221j26	Resistor 220ΩK 1/6W±5% CF 26mm	1	R501
110-16222j26	Resistor 2.2K 1/6W±5% CF 26mm	1	R515
110-16223j26	Resistor 22K 1/6W±5% CF 26mm	1	R628
110-16393j26	Resistor 39K 1/6W±5% CF 26mm	1	R631

Part Numbers	Description	Qty	Reference Designators
PWM/CONTROL PCB			
110-16432j26	Resistor 4.3K 1/6W±5% CF 26mm	1	R505
110-16433j26	Resistor 43K 1/6W±5% CF 26mm	1	R503
110-16471j26	Resistor 470ΩK 1/6W±5% CF 26mm	3	R510,522,524
110-16472j26	Resistor 4.7K 1/6W±5% CF 26mm	1	R520
110-16512j26	Resistor 5.1K 1/6W±5% CF 26mm	1	R514
110-16562j26	Resistor 5.6K 1/6W±5% CF 26mm	2	R518,630
110-16681j26	Resistor 680ΩK 1/6W±5% CF 26mm	1	R504
110-16682j26	Resistor 6.8K 1/6W±5% CF 26mm	1	R516
110-16683j26	Resistor 68K 1/6W±5% CF 26mm	1	R538
110-16751j26	Resistor 750ΩK 1/6W±5% CF 26mm	1	R509
116-161001f26	metal film Resistor 1K 1/6W±1% MF26mm	2	R541,542
116-161132f26	metal film Resistor 11.3K 1/6W±1%MF26mm	1	R512
116-1410r0j5vx	metal film Resistor 10Ω 1/4W ±5%	1	R500
Capacitors			
129-a105j633	metalized capacitor 1uF 63V ±5% MSC	1	C505
130-2b102k503	disc capacitor 1000P 50V±10%	1	C420
130-2b272k503	disc capacitor 2700pF 50V±10%	1	C507
130-2b472k503	disc cappacitor 4700P 50V ±10%	2	C511,624
130-3f104z503	disc capacitor 0.1U 50V +80/-20%	10	C503,506,509,510,512,542 C611,621,623,625
135-3106m50	electrolytic cap 10uF 50V ±20%	1	C422
135-3226m50	electrolytic cap 22U 50V ±20%	1	C508
135-3337m10	electrolytic cap 330U 10V ±20%	1	C612
135-3337m16	electrolytic cap 330uF 16V ±20%	1	C622
135-3476m50	electrolytic cap 47uF 50V ±20%	1	C421
137-3227m25	mini aluminum ec 220uF 25V ±20%	1	C504
Semiconductors			
192-027c1815gr	transistor 2SC1815GR NPN	11	Q404,406,501,503,514,610 Q611,612,622,624,626
192-028a1015gr	transistor 2SA1015GR PNP	6	Q502,504,505,621,623,625
192-028a965y	transistor 2SA965Y PNP	1	Q500
197-031n4148	diode IN4148 26mm	7	D503,540,550,552,611,612,613
199-15000625	zener diode 6.2V 1/2W 52mm	1	Z500
190-13494cn	IC TL494CN PWM	1	U500
190-99pc817c	IC PC817C(COSMO) Opticoupler	1	U501
192-027c1815gr	transistor 2SC1815GR NPN	2	Q405,513
192-028a1015gr	transistor 2SA1015GR PNP	1	Q506
Miscellaneous			
175-9f40hr2	coupling 40PIN PITCH=2.54mm HR2*40	0.4	M501,502
GAIN PCB			
Resistors			
115-h503b109	variable Resistor RD-901F-20-19KW-B50K-00D Gain, Bass	2	VR201,202
115-h503b214	variable Resistor RD-902F-20-19KW-B50K-00D Crossover	1	VR203
110-16102j26	Resistor 1K 1/6W±5% CF 26mm	3	R219,222,233
110-16103j26	Resistor 10K 1/6W±5% CF 26mm	2	R221,229
110-16123j26	Resistor 12K 1/6W±5% CF 26mm	1	R227
110-16153j26	Resistor 15K 1/6W±5% CF 26mm	1	R218
110-16202j26	Resistor 2K 1/6W±5% CF 26mm	1	R200
110-16223j26	Resistor 22K 1/6W±5% CF 26mm	2	R240,241
110-16243j26	Resistor 24K 1/6W±5% CF 26mm	1	R225
110-16392j26	Resistor 3.9K 1/6W±5% CF 26mm	1	R224
110-16393j26	Resistor 39K 1/6W±5% CF 26mm	1	R223

Part Numbers	Description	Qty	Reference Designators
GAIN PCB			
110-16473j26	Resistor 47K 1/6W±5% CF 26mm	2	R251,253
110-16474j26	Resistor 470K 1/6W±5% CF 26mm	1	R220
110-16622j26	Resistor 6.2K 1/6W ±5% CF 26mm	2	R250,252
Capacitors			
129-a104j633	metalized capacitor 0.1U 63V±5%MSTCAP	1	C211
129-a224j633	metalized capacitor 0.22uF 63V±5%MSC	1	C215
129-a274j633	metalized capacitor 0.27uF 63V±5%	4	C260,261,262,263
129-a394j633	metalized capacitor 0.39uF 63V±5%MSTCAP	1	C210
129-a823j633	metalized capacitor 0.082U 63V±5%MSC	1	C216
130-2b101k503	disc capacitor 100P 50V ±10%	4	C242,281,282,283
130-3f104z503	disc capacitor 0.1U 50V +80/-20%	6	C229,230,233,234,235,274
132-102j503	mylar capacitor 0.001U 50V±5%	1	C280
132-103j503	mylar capacitor 0.01uF 50V±5%	1	C217
137-3106m50	mini aluminum ec 10uF 50V ±20%	4	C228,230,266,267
Semiconductors			
190-06m4558d	I.C. OPA 4558D Dual Op-amp	3	U200,204,205
195-10204ubd	L.E.D 204-10UBD Power	1	LD500
Miscellaneous			
361-NYL-05049-0WA	LEDψ3*6	1	socket for LD500
162-a045d002-e	wire ass'y (RoHS)	1	M200
398-CU-05128-0BAE	control knob airtight cover PC+10%Gf black (RoHS)	1	
CLASS D AMP			
118-12061001j	SMD Resistor 1.00K 1206 5%	1	R2
118-12061002j	SMD Resistor 10.0K 1206 5%	6	R25,29,30,30B,7,9
118-120610r0j	SMD Resistor 10.0Ω 1206 5%	4	R20,20B,22,23
118-12062002j	SMD Resistor 20.0K 1206 5%	1	R26
110-12062201j	SMD Resistor 2.20K 1206 5%	19	R6,13,16,31,33,34,35,36,37,38 R39,40,41,42,43,44,45,46,32
118-12062204j	SMD Resistor 2.20M 1206 5%	1	R4
118-12062701j	SMD Resistor 2.70K 1206 5%	1	R10
118-12063000j	SMD Resistor 300.0Ω 1206 5%	1	R24
118-12063301j	SMD Resistor 3.30K 1206 5%	5	R1,14,15,27,28
118-12063902j	SMD Resistor 39.0K 1206 5%	1	R3
118-12064700j	SMD Resistor 470Ω 1206 5%	3	R8,11,21
118-12064701j	SMD Resistor 4.70K 1206 5%	2	R5,12
Capacitors			
141-c0101k50	SMD Capacitor 100pF 50V10% 1206 NPO	1	C4
141-c0220k50	SMD Capacitor 22pF 50V10% 1206 SMT NPO	1	C5
141-c0561k50	SMD Capacitor 560pF 50V10% 1206 NPO	1	C6
141-c5104m50	SMD Capacitor 1206 Y5V 0.1uF 50V±20%	8	C2,3,7,8,9,10,11,15
141-c7223k50	SMD Capacitor 0.022uF 50V 10%1206 X7R	1	C13
141-d7104ka0	SMD Capacitor 0.1uF 100V 10%1210 X7R	4	C12,14,18,19
128-e106ma01-s	non-polar ec 10uF 10V 20%	2	C16,17
132-104kb50	mylar capacitor 0.1U±10% 250V LS-1.mmMD	1	C20
132-105kb50	mylar capacitor 1uF 250V ±10%	1	C40
Semiconductors			
190-16t1072dts	SMD I.C.TL072CDT SGS THOMSON Dual Op-amp	1	IC1
192-09124126qs	SMD transistor 2SC2412K-T146Q/R ROHM	2	Q1,4
192-09139066rs	SMD transistor 2SC3906K-T146R ROHM	2	Q2,8

Part Numbers	Description	Qty	Reference Designators
CLASS D AMP			
192-091sc4672	transistor 2SC4672(MPT3)ROHM	1	Q5B
192-092130376qs	SMD transistor 2SA1037K-T146Q/R ROHM	2	Q7,9
192-09215146rs	SMD transistor 2SA1514K-T146R ROHM	1	Q3
192-1582n5401	transistor FSC 2N5401 AI-PNP 350V 500mA TO-92	1	Q6B
197-03r1s4148s	SMD diode RLS4148-TEII ROHM	8	D1,2,3,4,5,5B,6,20
199-15000563s	SMD ZENER 5.6V 5%PHILIPS BZX84-C5V6	2	Z1,Z2
199-15001203s	SMD ZENER 12V 5% PHILIPS BZX84-C12	4	Z3,4,5,6
192-232irf9640	FET IRF9640 IF P-CH T0220	2	Q10,10B
192-233f640n	FET IRF640N INTERNATIONAL	1	Q11
Miscellaneous			
122-13151k0190	CHOKE SA-500-280(PT1601B*151MAA)	1	L1
122-14300k4	Ferrite core LD1215*300KU*±10%	1	L2
175-9f40hr2	coupling 40PIN PITCH=2.54mm HR2*40		

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C228
R221
C211
C230
R241
R229
C215
C216
U204
C234
M200
C235
C267
R251
U200
R253
C263
C262
C231
C233
R225
R222
R233
R218
C210
R227
R240
C280
R220
C242
C217
R223
R224
R200
C283
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U205
R252
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C260
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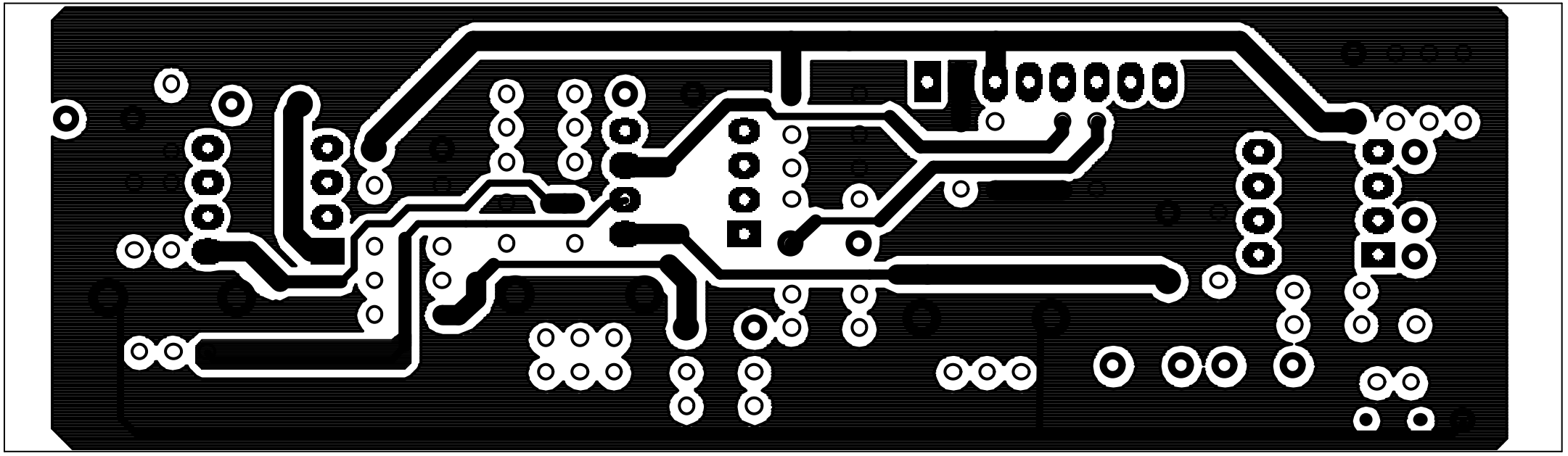
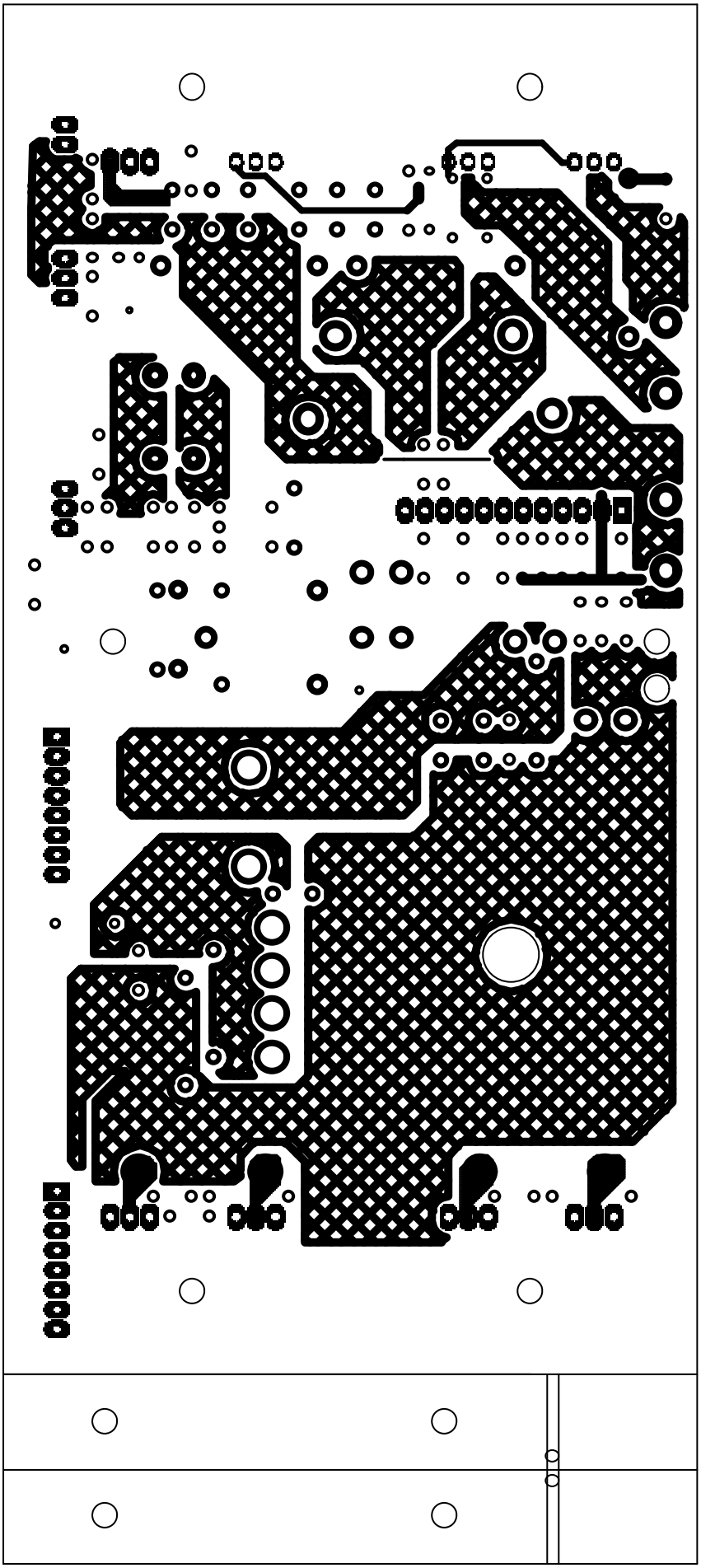
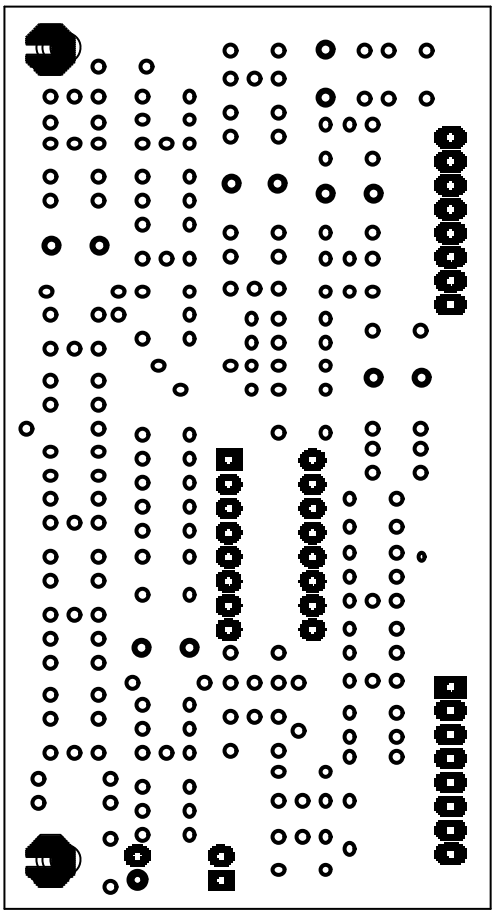
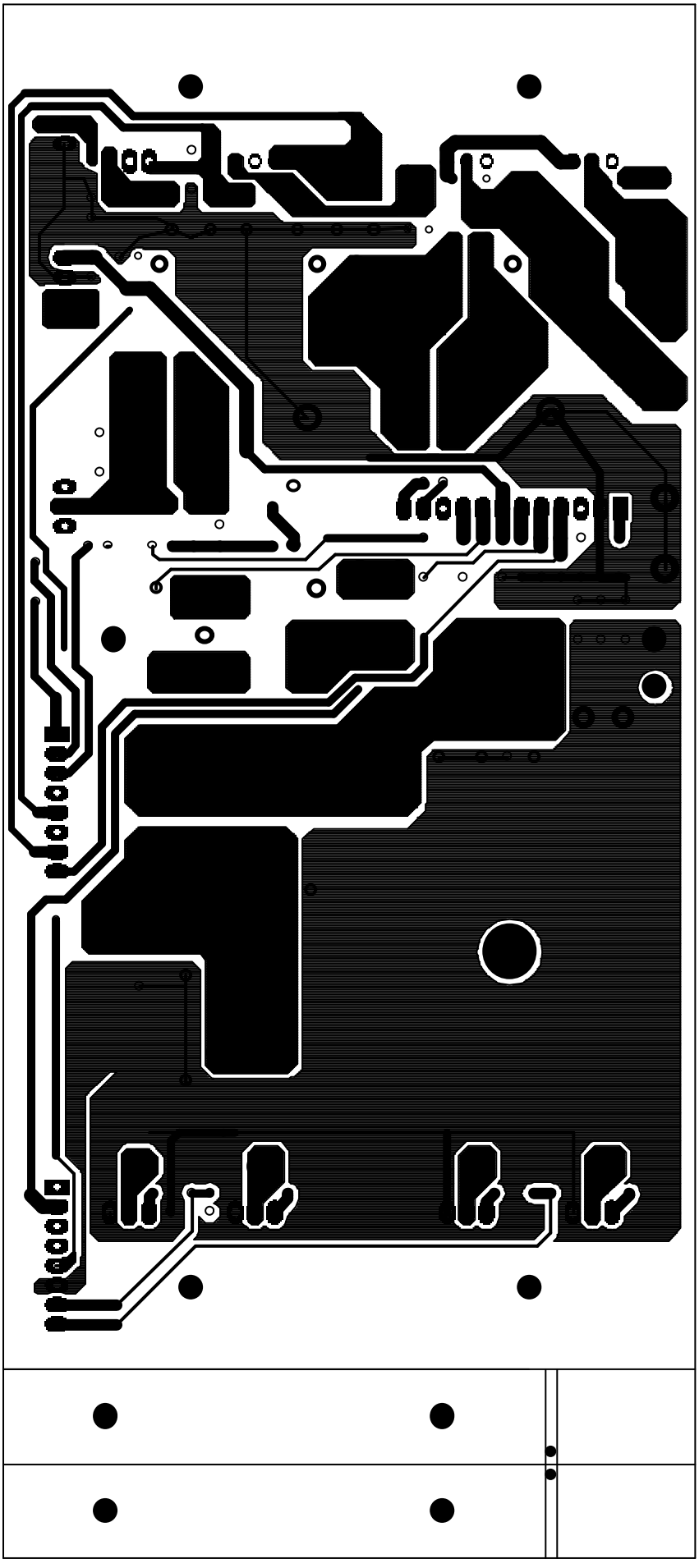
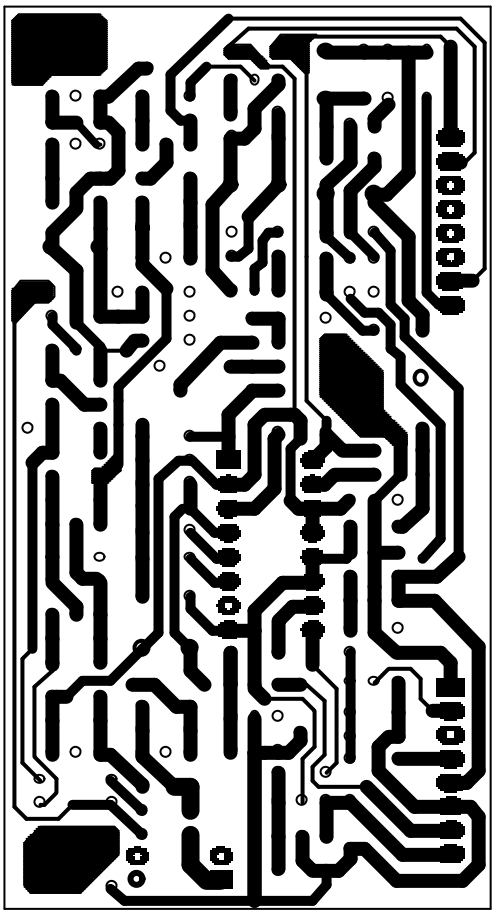
LD500
VR202
VR203
VR201

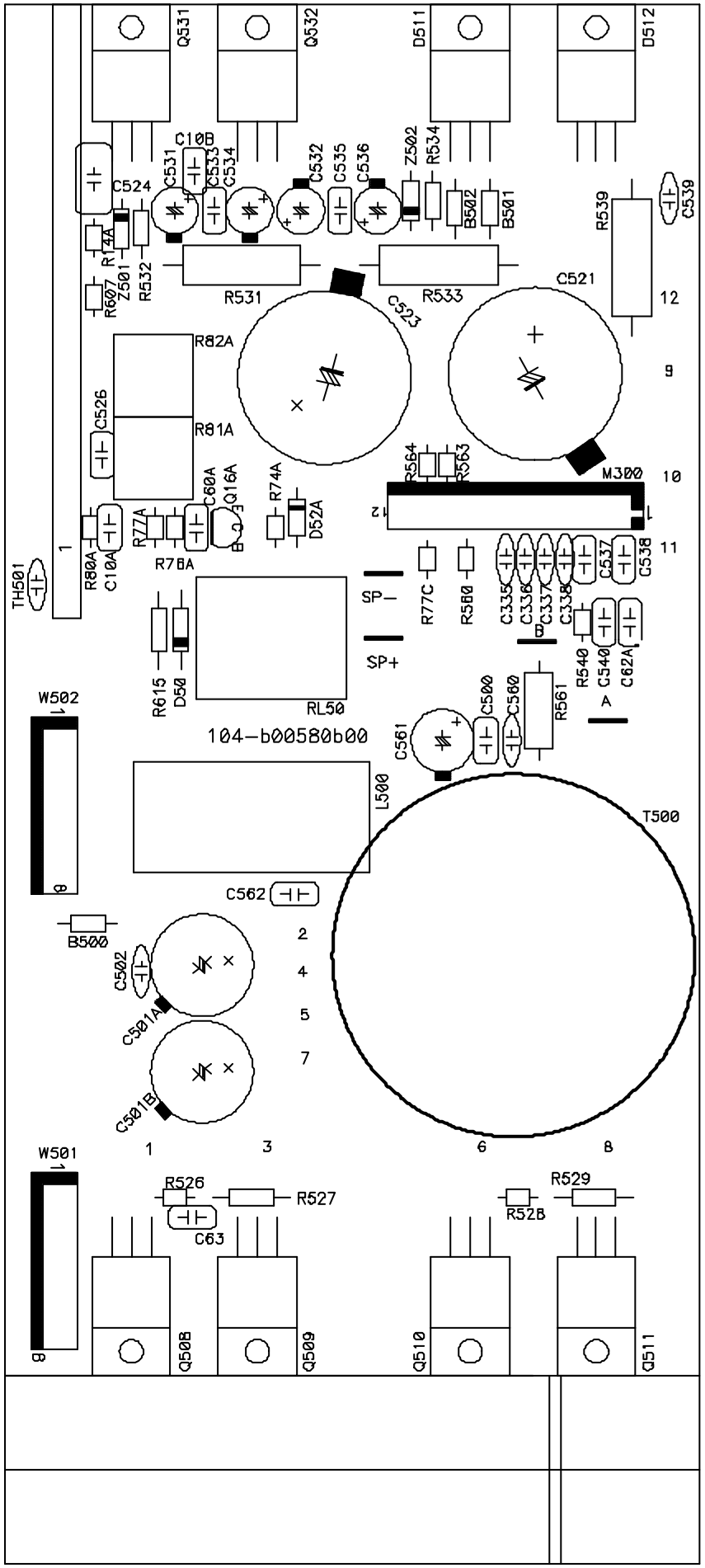


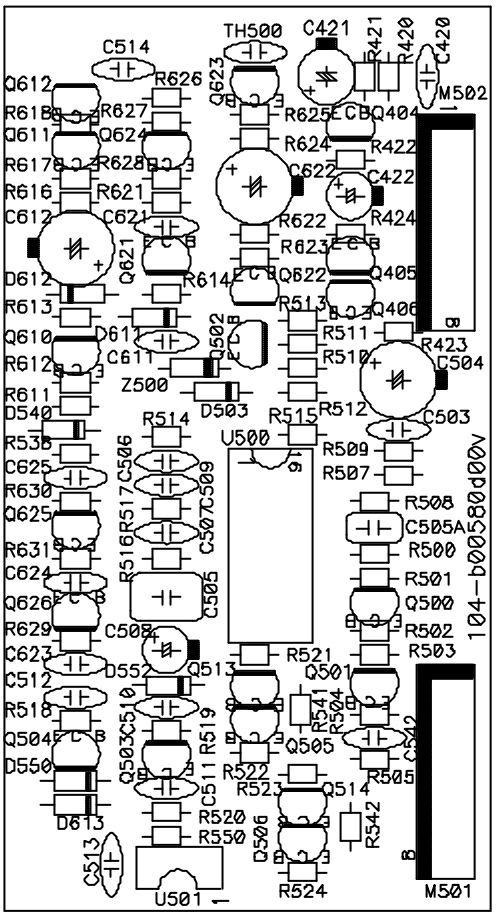


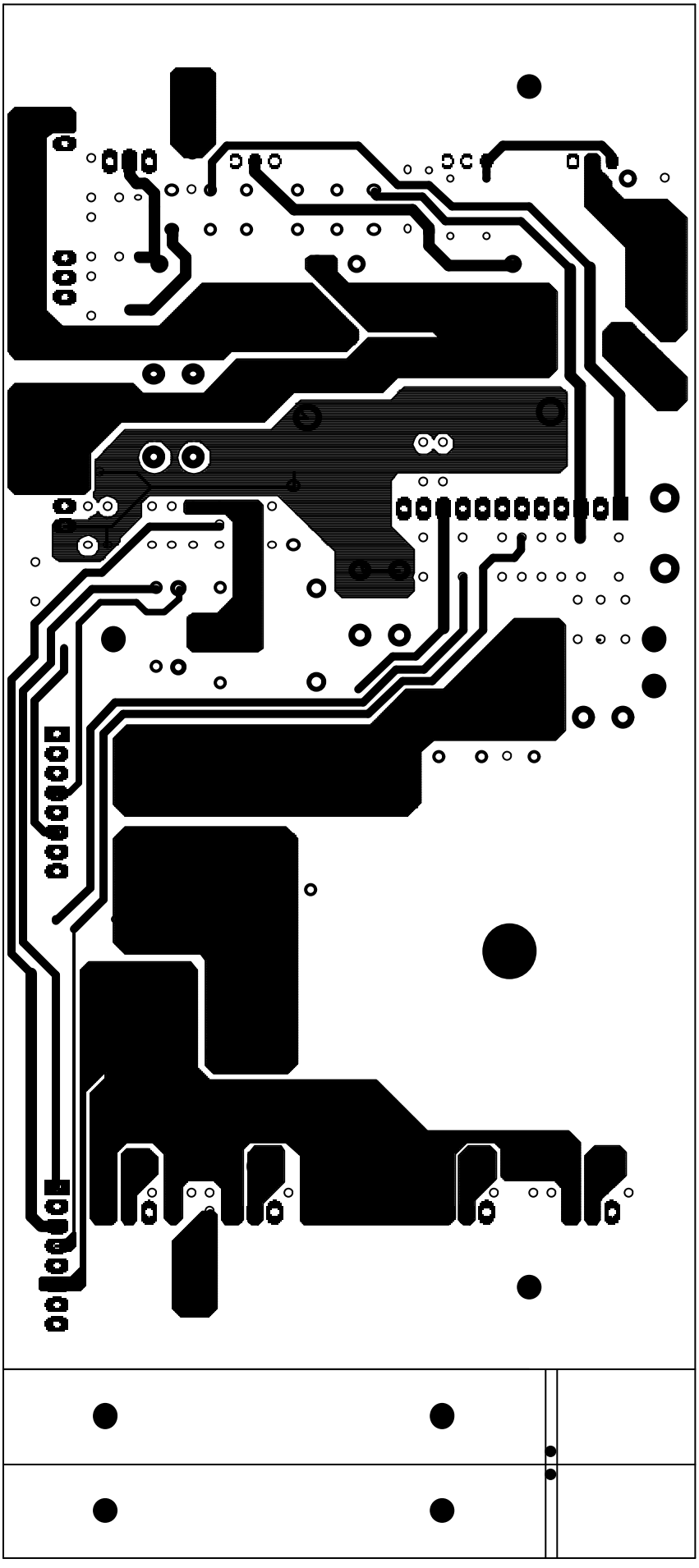


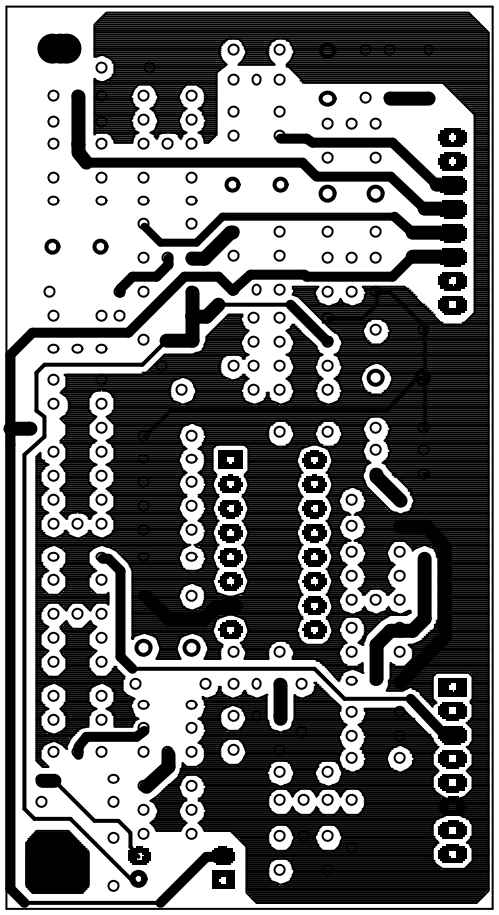


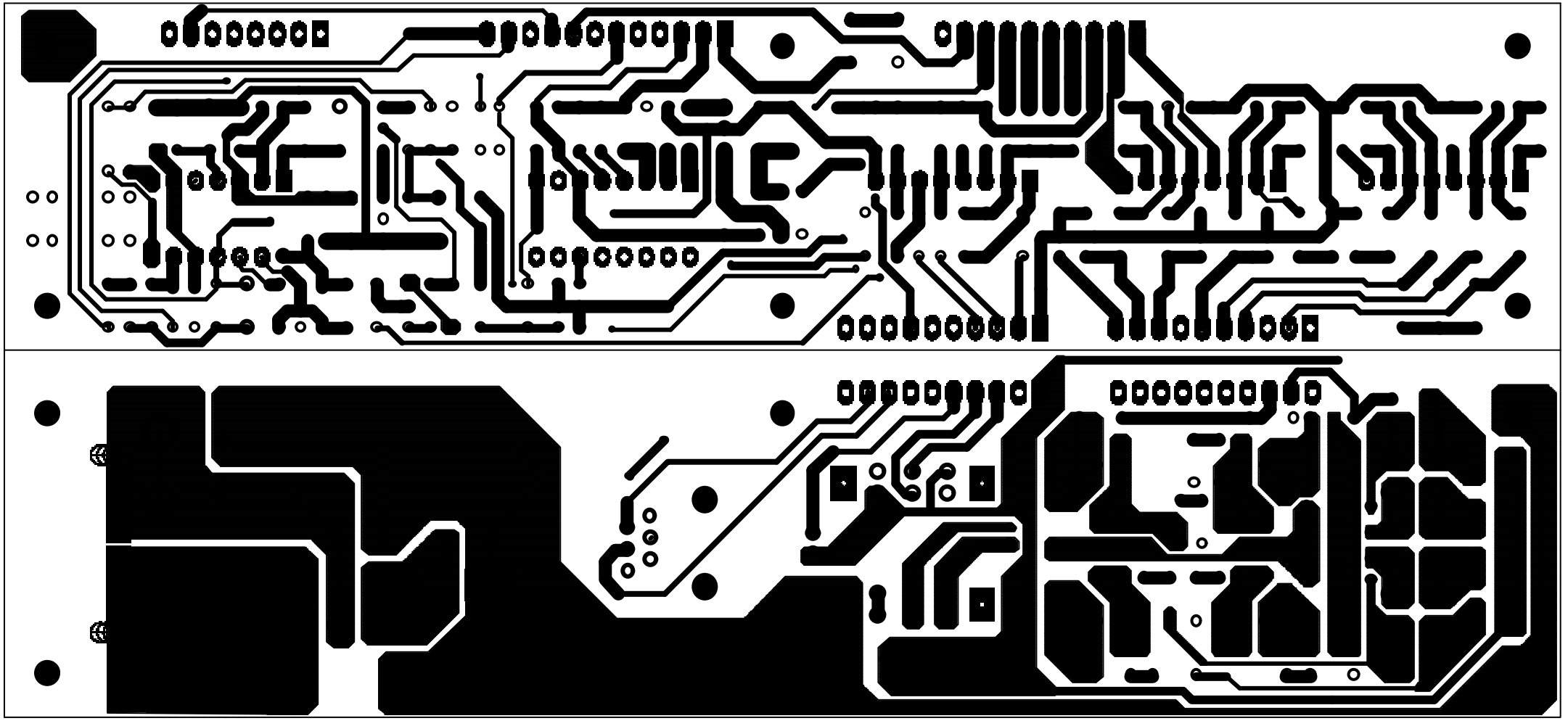


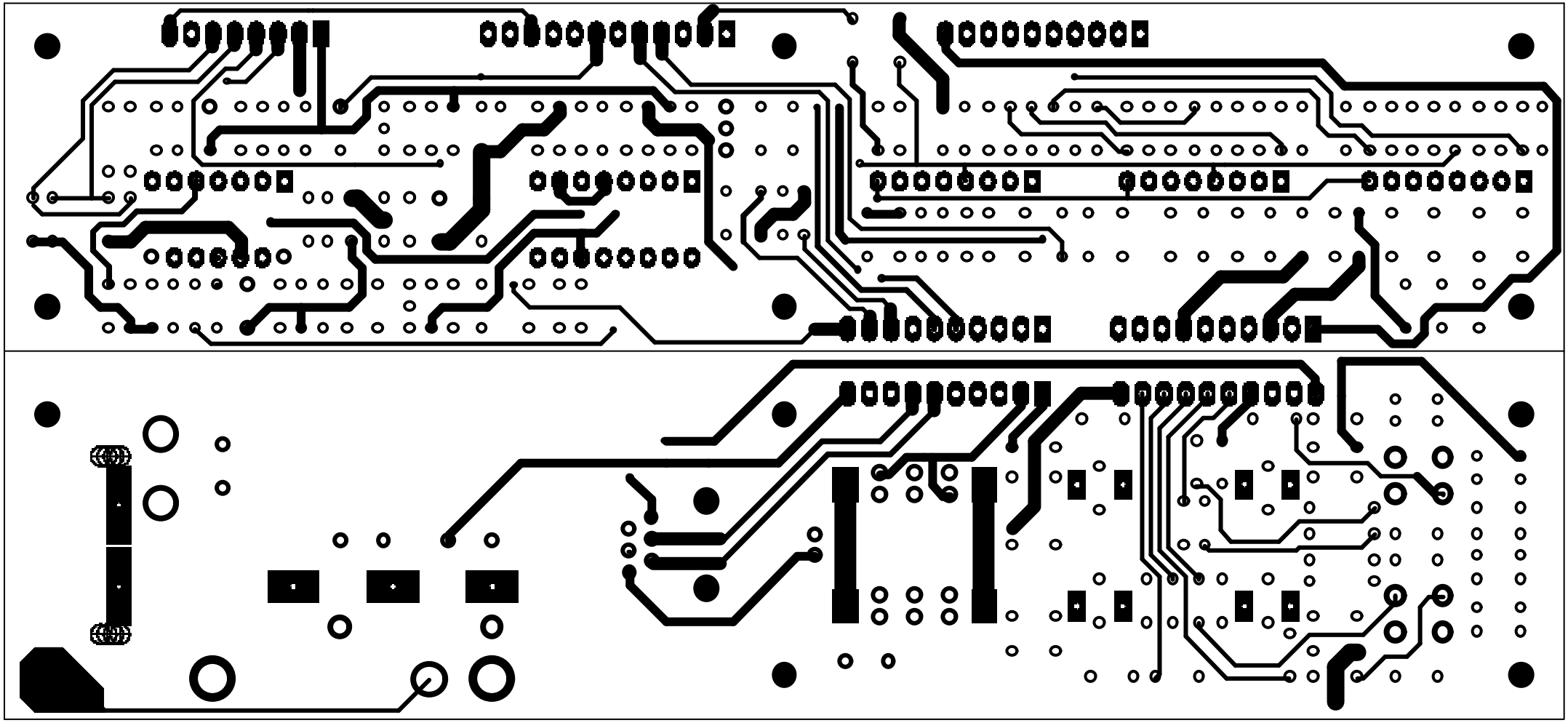

Q531
Q532
D511
D512
C10B
C531
C533
C534
C524
C532
C535
C536
Z502
R534
B502
B501
R14A
Z501
R532
R607
R531
R533
C521
C539
R539
12
9
R82A
R81A
C526
C527
M300
10
R564
R563
C60A
Q16A
R74A
D52A
R77A
R80A
C10A
R78A
TH501
11
C537
C538
SP−
SP+
R77C
R580
C335
C336
C337
C338
R540
C540
C62A
R615
D50
RL50
104−b00580b00
W502
C561
C500
C560
R561
L500
T500
C562
B500
C502
C501A
C501B
2
4
5
7
1
3
6
8
W501
R526
R527
C63
R529
R528
Q508
Q509
Q510
Q511

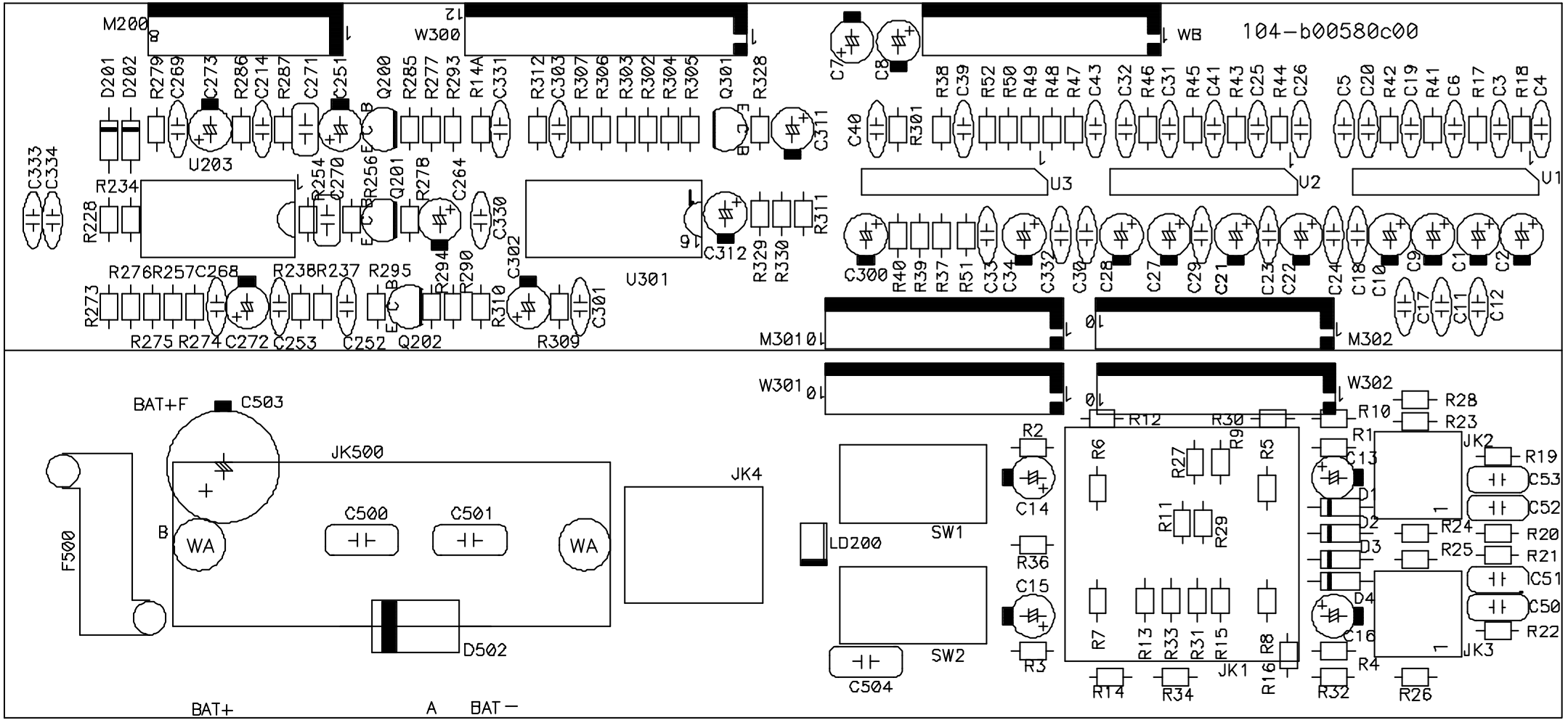

TH500
C421
C514
R626
R627
R628
R621
C621
Q621
R614
C622
R622
R623
Q622
R513
C502
Z500
D503
R514
U500
C506
C507
C509
R517
R516
C505
C508
D552
Q513
R521
C510
R519
R511
R510
R512
C504
C503
R509
R507
R508
C505A
R500
R501
Q500
R502
R503
Q501
R504
R505
Q505
R522
R523
Q514
R542
R520
R550
C511
C513
U501
R524
M501
M502
C420
R421
R420
C422
R424
R423
104−b00580d00v

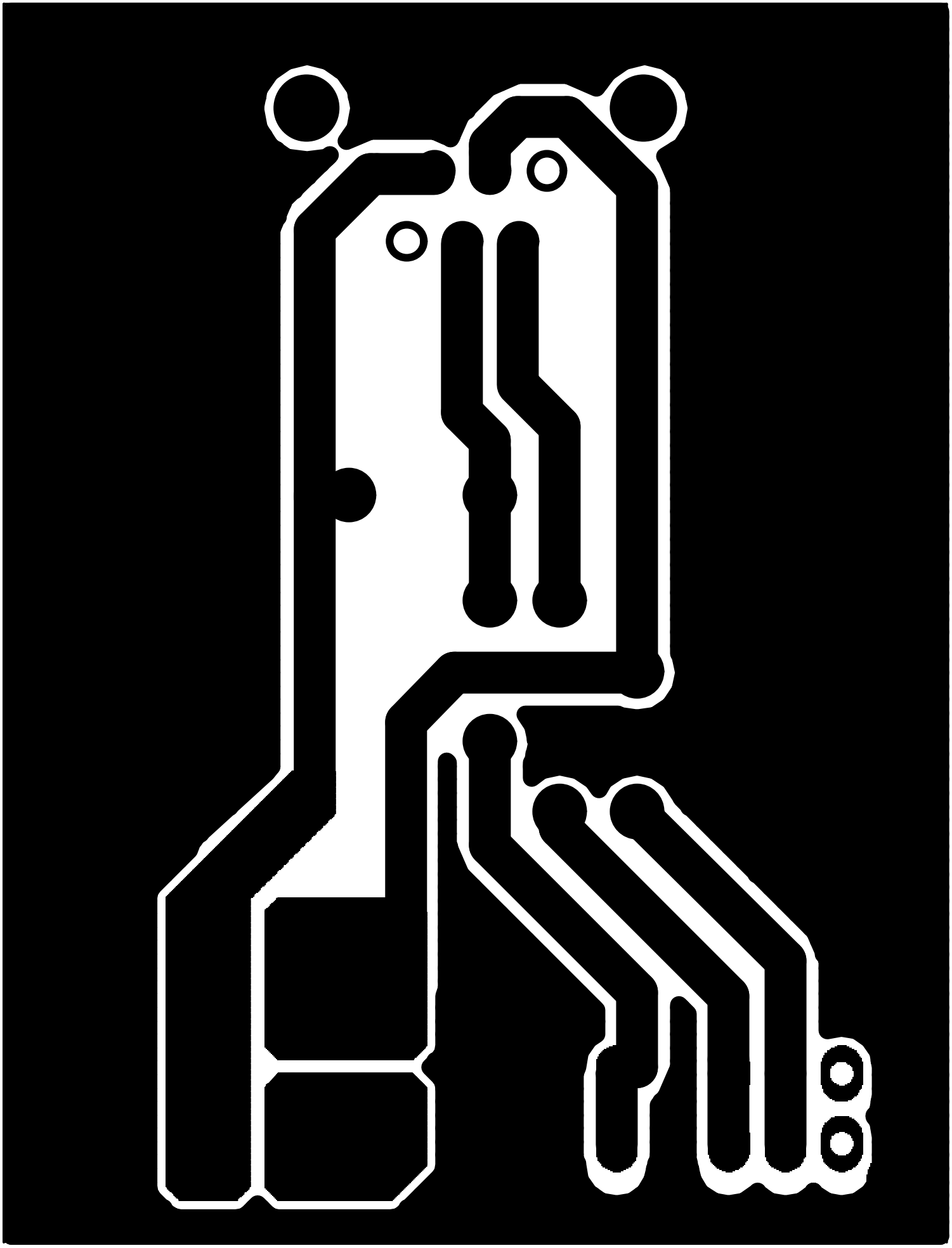


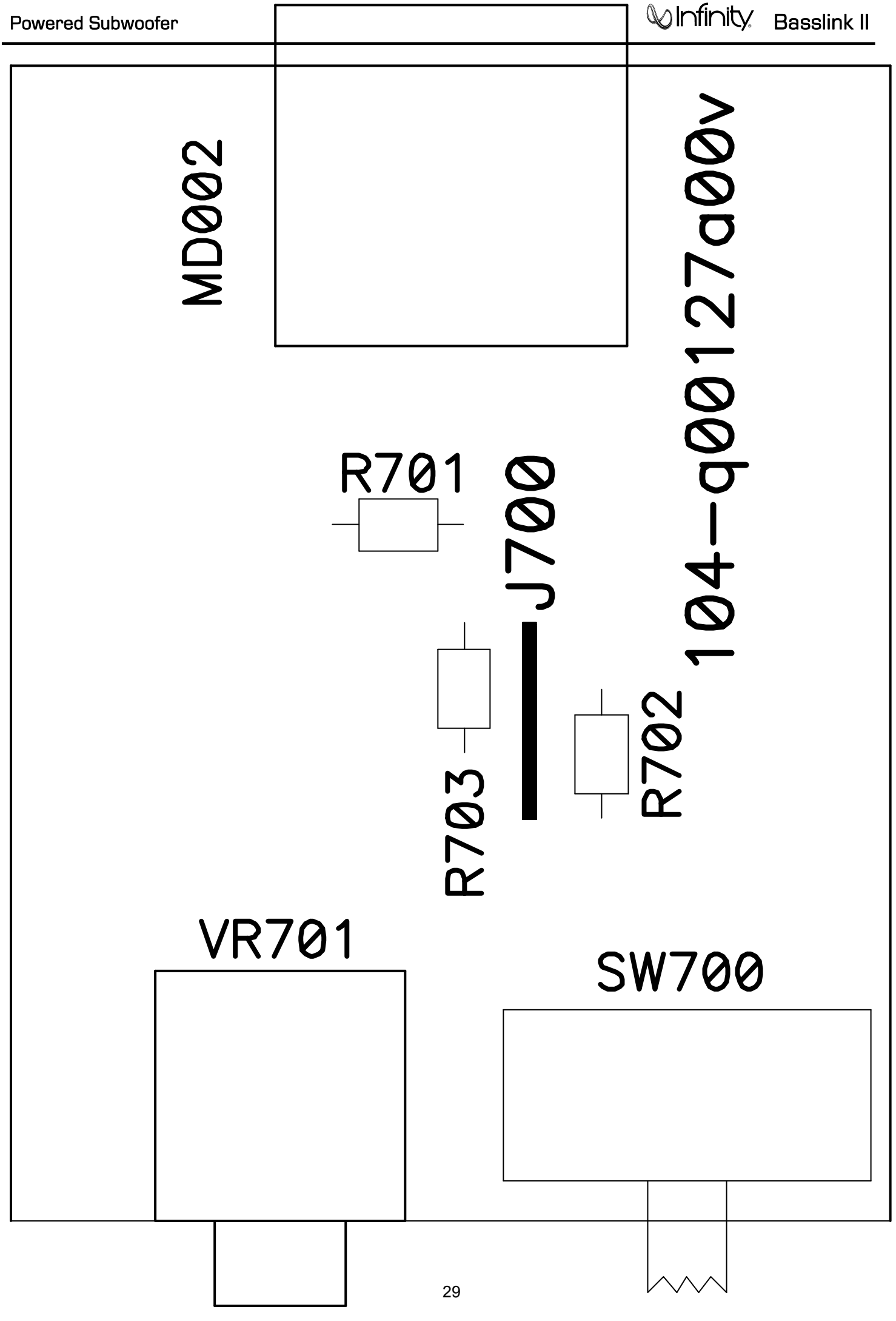




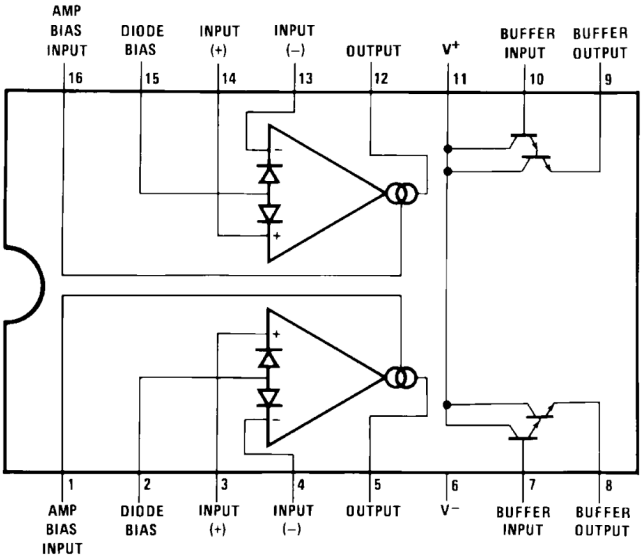



104-b00580c00
M200
W300
WB
U203
U301
U3
U2
U1
M301
M302
W301
W302
JK500
JK4
JK1
JK2
JK3
SW1
SW2
LD200
F500
D502
C503
C504
BAT+F
BAT+
BAT-
A
B
WA

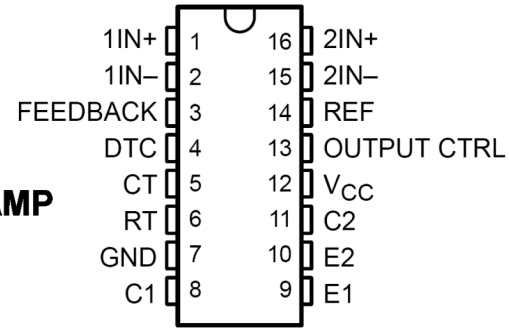



MD002
104-q00127a00v
R701
J700
R703
R702
VR701
SW700

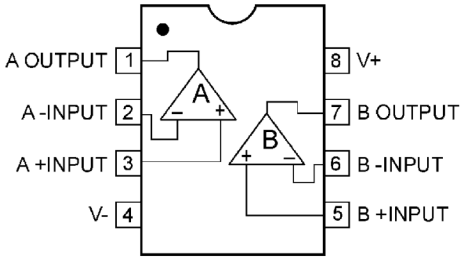
LM13700 DUAL OP-AMP
U301



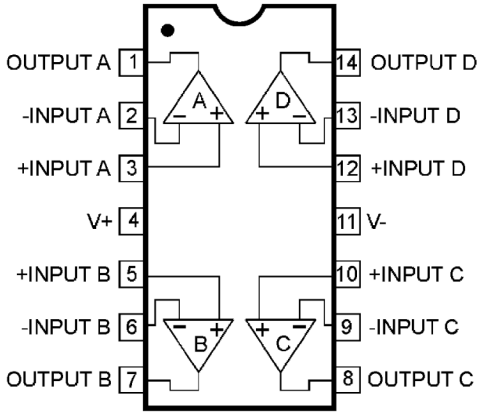
TL494CN
U500



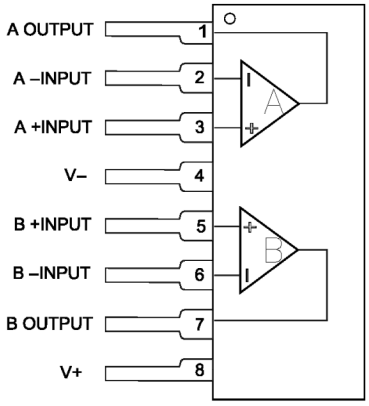
4558 DUAL OP-AMP
U200,204,205
TLO72 IC1



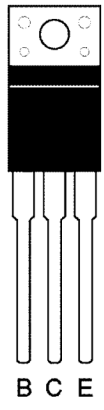
TL074
OPAMP, QUAD 14P
U203



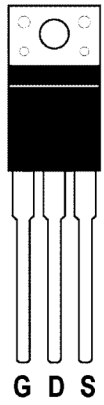
NJM4558L Dual Op-Amp
U1, U2, U3



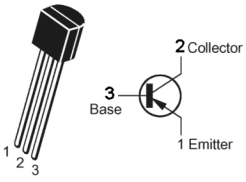
TIP31C Q531
TIP32C Q532



IRF9640 Q10,10B
IRF640N Q11
STP60NF06
Q508-511



2SA1015GR
Q202,506,502,504,505
621,623,625



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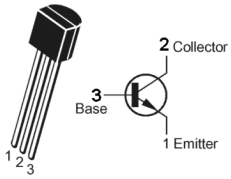
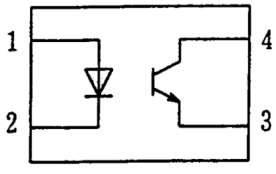
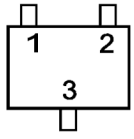
Q200,201,301,405,513,
404,406,501,503,
514,610-612,622,624,626



PC817C
U501

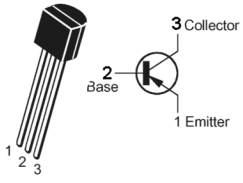


2SC3906K Q2,8
2SC2412K Q1,4
2SA1037K Q7,9
2SA1514K Q3

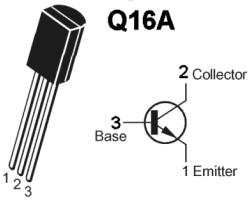


1) Emitter
2) Base
3) Collector

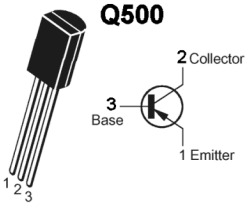
2N5401 Q6B



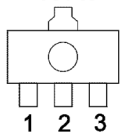
2SC2235
Q16A



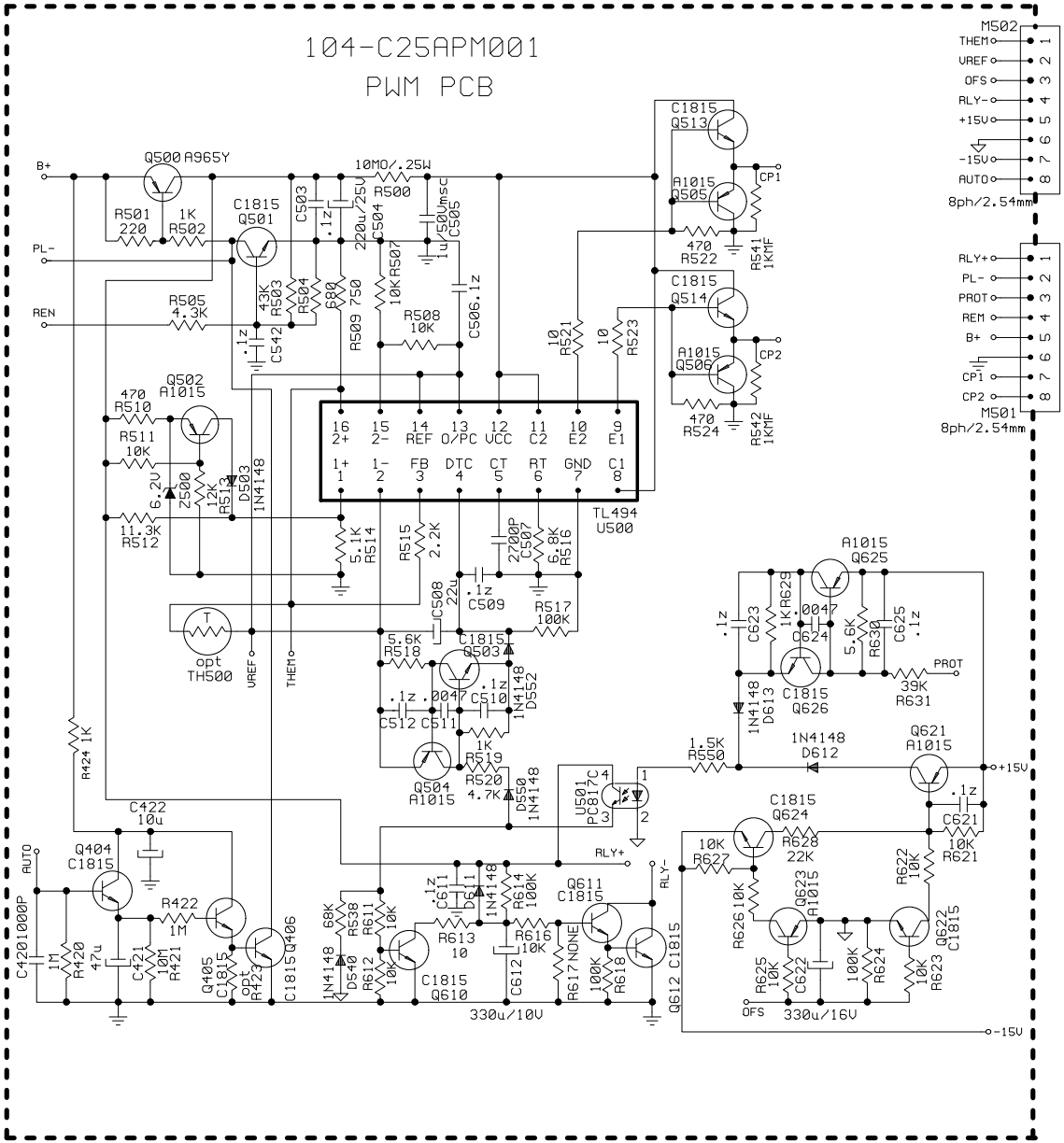
2SA965Y
Q500

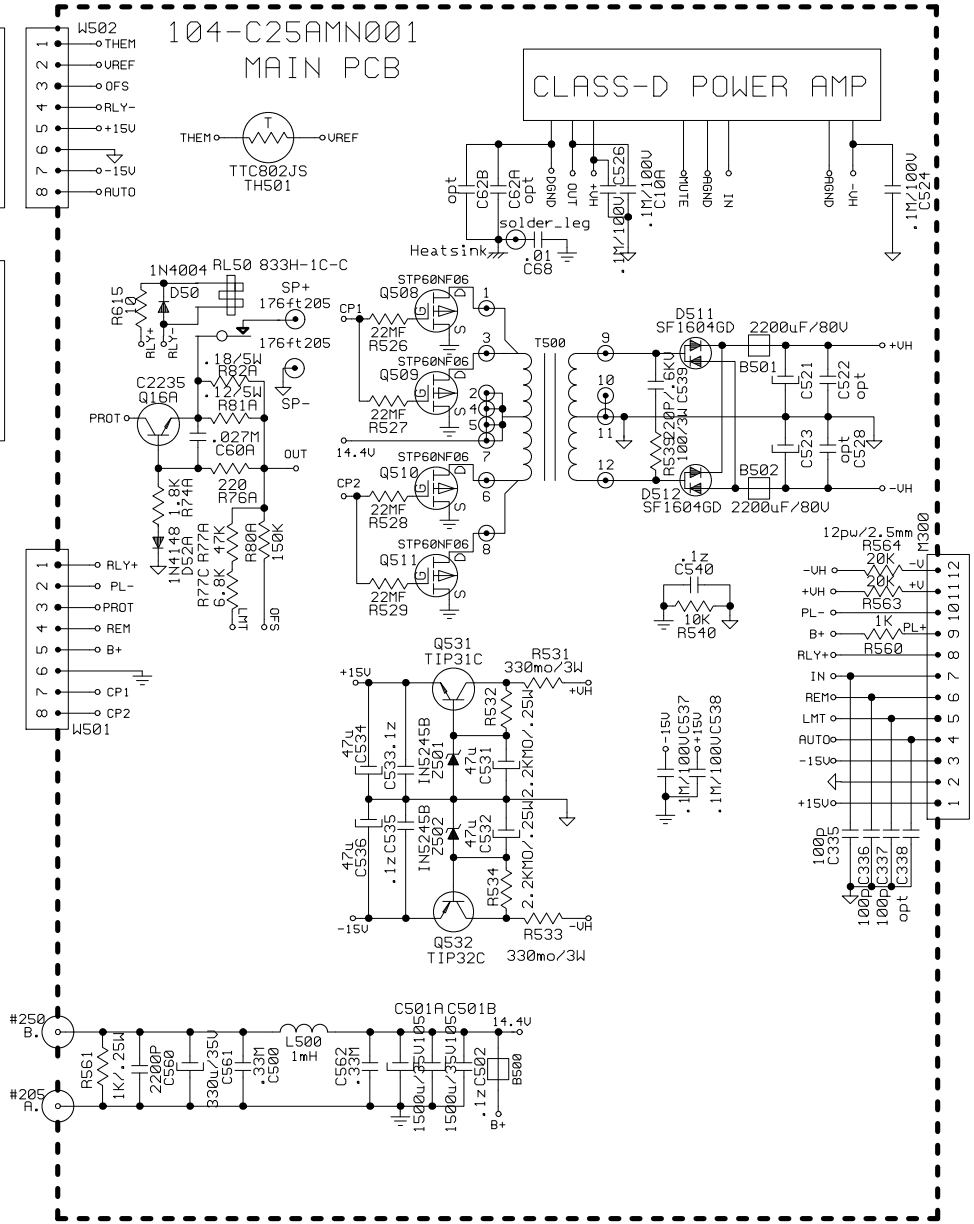


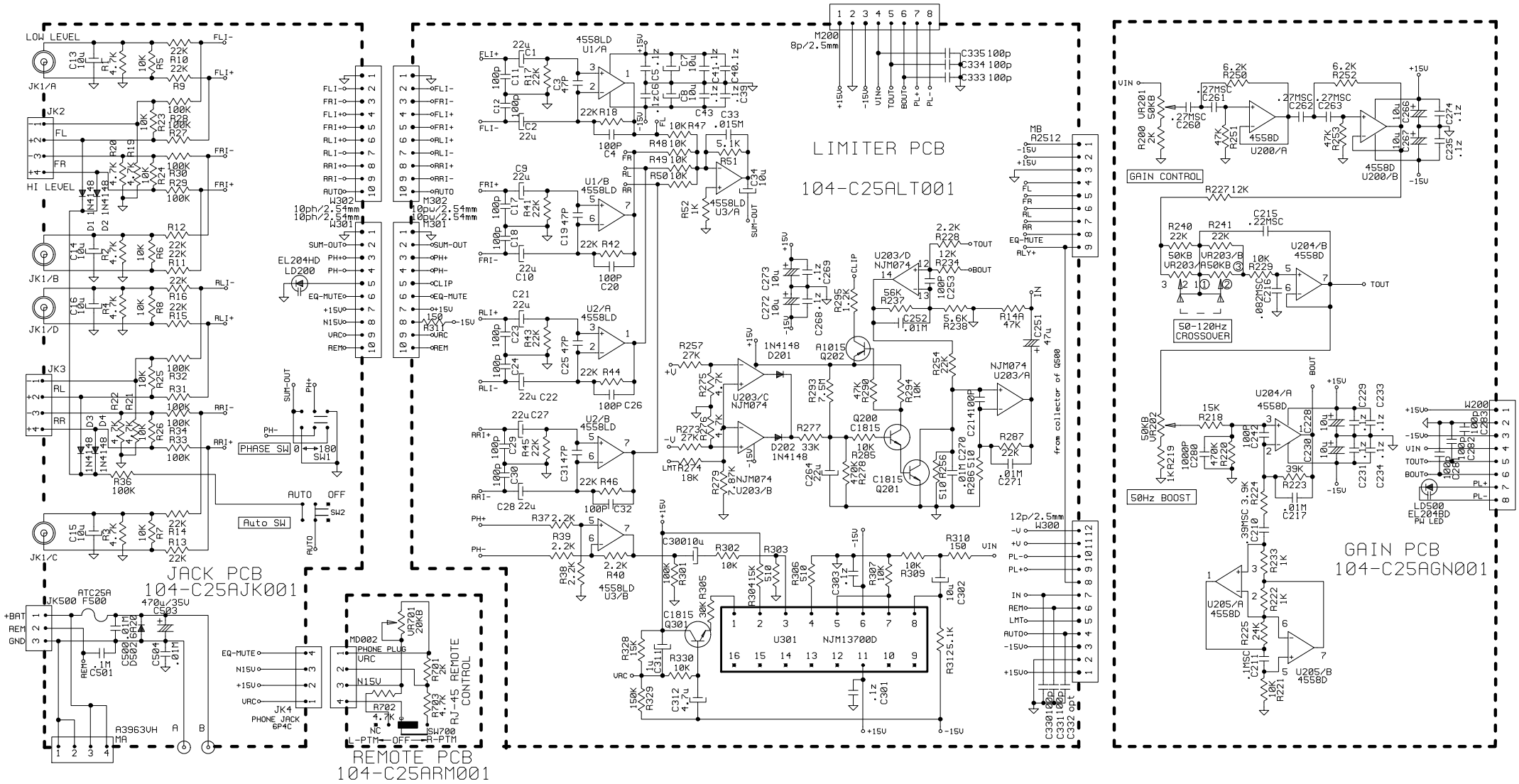
2SC4672
Q5B

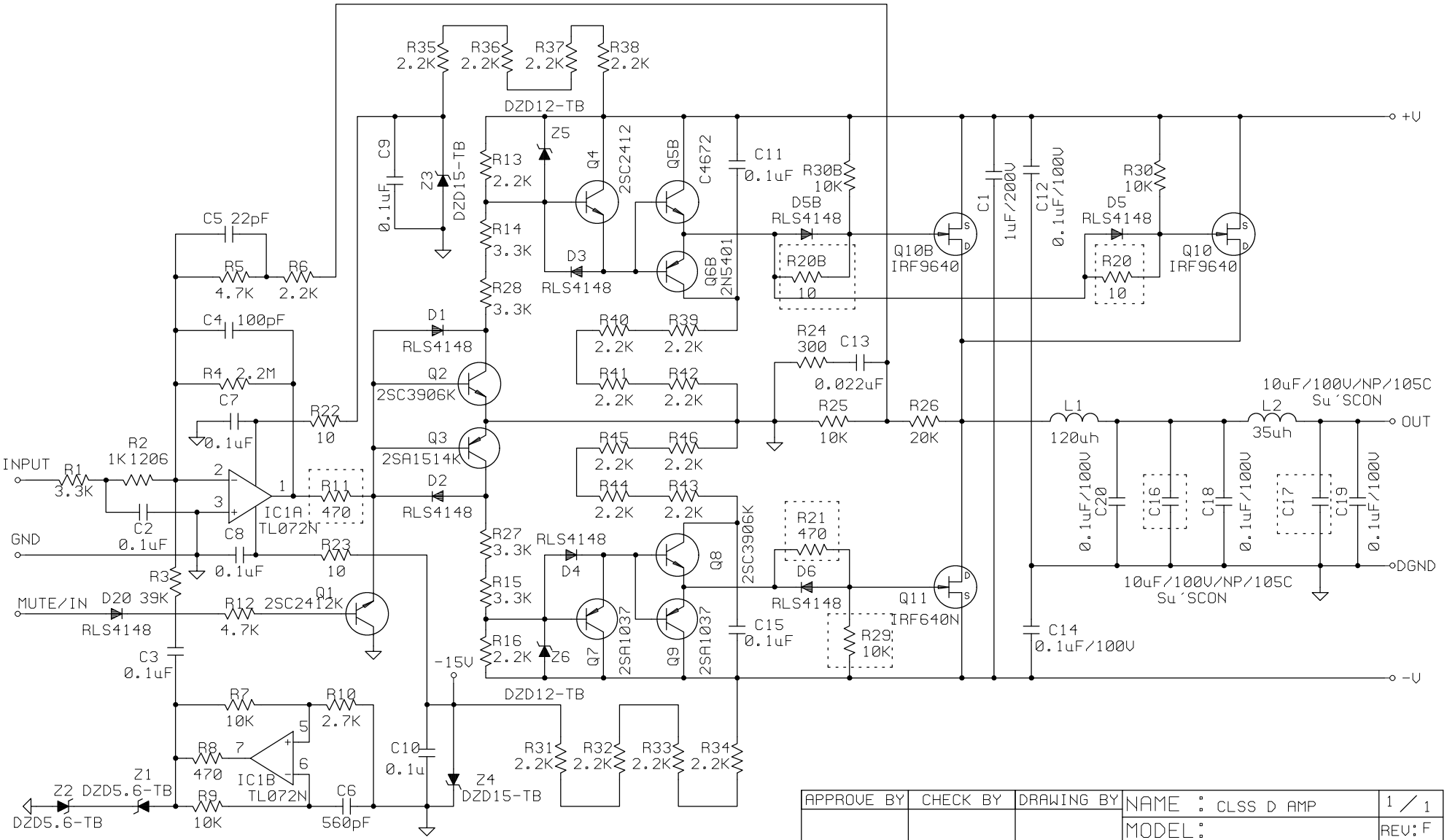


1) Base
2) Collector
3) Emitter


104-C25APM001
PWM PCB
TL494
U500
M502
M501
8ph/2.54mm
W502
W501
TH500
TH501
TTC802JS


104-C25AMN001
MAIN PCB
CLASS-D POWER AMP
RL50 833H-1C-C
TL494
TTC802JS


JACK PCB
104-C25AJK001
LIMITER PCB
104-C25ALT001
GAIN PCB
104-C25AGN001
REMOTE PCB
104-C25ARM001
LOW LEVEL
HI LEVEL
JK1/A
JK1/B
JK1/C
JK1/D
JK2
JK3
PHASE SW
Auto SW
SW1
SW2
EL204HD
LD200
W301
W302
M301
M302
M200
W300
MB A2512
JK500 F500
ATC25A
A3963VH
JK4
PHONE JACK 6P4C
MD002
PHONE PLUG
RJ-45 REMOTE CONTROL
U301 NJM13700D
4558LD
NJM074
4558D
GAIN CONTROL
50-120Hz CROSSOVER
50Hz BOOST
from collector of Q500



APPROVE BY	CHECK BY	DRAWING BY	NAME : CLSS D AMP	1 / 1
			MODEL :	REV: F
			CUSTOMER :	
			DATE : - -	